S M V E C
PHARMACY COLLEGE
(Approved by Pharmacy Council of India and Government of Puducherry)
(Affiliated to Pondicherry University)
Madagadipet, Puducherry - 605 107

MINUTES OF 4th MEETING OF BOARD OF STUDIES (UG)

Venue: Board Room-II, Admin Block

Date:06/03/2025

2024-25

SMVEC PHARMACY COLLEGE

Minutes of 4th Meeting of Board of Studies (UG/DIPLOMA)

The Third meeting of Board of Studies (BoS) in Pharmacy Department was held on **6th March 2025 at 2.30 PM** the Board Room - II in SMVEC Pharmacy College with Head of Department in the Chair.

The following members were present for the BoS meeting

Sl. No.	Name of the Member	Designation
Head of the Department (Chairperson)		
1	Dr. M. Dhanalakshmi, Dean, Department of Pharmacy, Specialization: Pharmaceutical Quality Assurance Years of Experience: 17 years 3 months SMVEC Pharmacy College dhanadlxb@gmail.com Mobile: 9550169191	**Chairperson**
One expert nominated by the Vice-Chancellor, Pondicherry University from a panel of six recommended by the college principal.		
2	**Dr. Nisha Mathew,** Director Grade Scientist (Retd.), ICMR-Vector Control Research Centre, Indira Nagar, Gorimedu, Puducherry-605006. nisha.mathew@icmr.gov.in / nishamathew@yahoo.com Mobile: 9444935790	**Subject Expert**
Two subject experts from outside the Parent University nominated by the Academic Council		
3	**Dr. Kailasam Koumaravelou,** Dean, Specialization: Pharmacology Years of Experience: 25 Prist School of Pharmacy, Manamainallur, Kancheepuram Dist. koumar@gmail.com Mobile: 9443309034	**Subject Expert**

Dean
SMVEC Pharmacy College
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Puducherry.

4	**Dr. V. Vijayan** Associate Dean Research Specialization: Pharmaceutics Years of Experience:16 Sri Balaji Vidyapeeth (Deemed to be University) Puducherry . vijayanv@gmail.com Mobile: 9751391078	**Subject Expert**
One representative from industry/corporate sector/allied area relating to placement.		
5	**Dr. E. Anandakirouchenane** Controlling Authority cum Licensing Authority, Department of Drug Control, Puducherry. e.anandakirouchenana@py.gov.in Mobile: 9443957680	**Member**
Experts from outside the Autonomous College, whenever special course of studies is to be formulated.		
6	**Dr. N. Kannappan** Professor Department of Pharmacy, Annamalai University, Annamalai Nagar 608002 kannappanpharmacy@gmail.com Mobile: 7010924748	**Subject Expert**
7.	**Mr. S. Mathivanan** Assistant Professor, SMVEC Pharmacy College, Madagadipet, Puducherry – 605501 drxmathinanotech@gmail.com Mobile: 9344438146	**Member**
8.	**Mrs. B. Durgambigai** Assistant Professor, SMVEC Pharmacy College, Madagadipet, Puducherry – 605501 durgabalu81@gmail.com Mobile: 9444047453	**Member**
9.	**Dr.K.Ramprasad** Assistant Professor,SMVEC Pharmacy College , Madagadipet,Puducherry -605107 Mobile:7538843986	**Member**

M.G.

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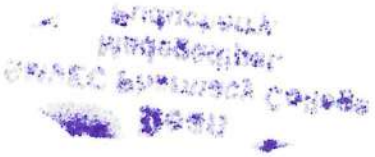

Special Invitees		
10.	**Dr. S. Anbumalar** Dean Academics Sri Manakula Vinayagar Engineering College, Madagadipet, Puducherry-605107 Mobile:9443179533	**Dean Academics**
11.	**Dr. Arivalagar . A.A** Dean Academics Sri Manakula Vinayagar Engineering College, Madagadipet, Puducherry-605107 Mobile: 78100 75545	**Dean Academics**

Agenda of the Meeting	
Agenda 1/BoS /4 /2025 /pharmacy/UG	To Confirm the minutes of 3rd BOS Meeting held on 30/08/2024
Agenda 2/BoS 4 /2025 /pharmacy/UG	To approve the syllabi of VI Semester of B. Pharmacy Programme in SMVEC Pharmacy college.
Agenda 3/BoS /4 /2025 /pharmacy/UG	To review the Academic Activities for B.Pharmacy Programme from the Academic year 2024-25. a) Curriculum Activity b) Co-curriculum Activity c)Extra-curriculum Activity
Agenda 4/BoS /4 /2025 /pharmacy/UG	To recommend the panel of examiners for Evaluation and the External members for the B. Pharm programme to the Academic Council.
Agenda 5/BoS /4 /2025 /Pharmacy/UG	To discuss and approve the Syllabus for Skill Development Course GLP/GMP/RA in VI Semester
Agenda 6/BoS /4/2025 /Pharmacy/UG	Any other additional points to be discussed with the permission of Chair. a) Ratification for Assessment procedure for Mandatory Non-Credit Courses in SMVEC Pharmacy Regulation (R-2023)

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Puducherry.

Dr. M. Dhanalakshmi, Chairperson, BoS opened the meeting by welcoming all the members and the meeting thereafter deliberated on agenda items that had been approved by the Members of BoS.

Agenda 1/BoS /4 /2025 /pharmacy/UG/Diploma

To Confirm the minutes of 3rd BOS Meeting held on 30.08.2024.

Suggestion Made	Action Taken
Implement the Methodologies in innovative teaching.	As suggested by BOS members, various pedagogy methods are used namely problem-based learning, group learning, project-based learning, use of ICT tools and quiz programme to ensure to attain the desired learning outcomes.
MOU with Pharmaceutical Industries	As suggested by BOS the MOU has made with two Pharmaceutical Industries. (Dr.Milton Pharmaceutical Pvt Ltd and Goodmann Pharmaceuticals Ltd-Thirubuvanai)

Agenda 2/BoS 4 /2025 /Pharmacy/UG/Diploma

To approve the syllabi of VI Semester of B. Pharmacy Programme in SMVEC Pharmacy college.

Members of BoS confirmed the syllabi of VI Semester of B. Pharmacy Programme in SMVEC Pharmacy college. **Annexure I**

Agenda 3/BoS /4 /2025/pharmacy/ UG/Diploma

To review the Academic Activities for B.Pharmacy Programme from the Academic year 2024-25.
a) Curriculum Activity
b) Co-curriculum Activity
c)Extra-curriculum Activity

Members of BoS appreciated the Academic Activities conducted for B.Pharmacy Programme from the Academic year 2024-25. **Annexure II**

Agenda 4/BoS /4 /2025/Pharmacy/ UG/Diploma

To recommend the panel of examiners for Evaluation and the External members for the B. Pharm programme to the Academic Council.

Members of BoS confirmed the Panel of examiners for B. Pharm Programme to the Academic Council. The List of Examiners are given in **Annexure III**

M.Q

Dean
SMVEC Pharmacy College
Madagadipet,

Agenda 5/BoS /4 /2025 /Pharmacy/UG/ Diploma

To discuss and approve the Syllabus for Skill Development Course GLP/GMP/RA in VI Semester.

Members of BoS confirmed the syllabi of for Skill Development Course GLP/GMP/RA in VI Semester and suggested modification are incorporated.**Annexure I**

Agenda 6/BoS /4 /2025/pharmacy/ UG/Diploma

Any other additional points to be discussed with the permission of Chair.

Ratification for Assessment procedure for Mandatory Non-Credit Courses in SMVEC Pharmacy Regulation (R-2023)

Members of BoS Ratified the Assessment procedure for Mandatory Non-Credit Courses in SMVEC Pharmacy Regulation (R-2023). **Annexure IV**

The End Semester Examination (ESE) results are submitted and BoS appreciated the efforts made by the Dean and Staff members in the Academic Progress.

The SMVEC pharmacy Dean enclosed the presentation for the upcoming events likes Mou with MNC Pharma companies and FDP webinars.

The BoS members suggested the following

- to issue Students Hands Book in each semester from the Academic Year 2025-26.
- to be a member in CPCSEA-SMVMH .

The Fourth BoS Meeting was concluded at 4.00 PM by proposing a Vote of Thanks by **Dr. M. Dhanalakshmi**, Chairperson, Board of Studies, SMVEC Pharmacy College.

Dean
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PHARMACY COLLEGE

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Madagadipet, Puducherry - 605 107

Date : 06.03.2025

The Fourth meeting of BOS approval was concluded at 4.00 PM by Dr.M.Dhanalakshmi, Chairperson, Board of Studies, Department of Pharmacy, Sri Manakula Vinayagar Engineering College.

Sl. No.	Name of the Member with Official Address	Designation	Signature
1	**Dr. M. Dhanalakshmi,** Dean, Department of Pharmacy, SMVEC Pharmacy College	**Chairperson**	
2	**Dr. Nisha Mathew,** Director Grade Scientist (Retd.), ICMR-Vector Control Research Centre, Indira Nagar, Gorimedu, Puducherry-605006.	**Subject Expert**	
3	**Dr. Kailasam Koumaravelou,** Dean, Prist School of Pharmacy, Manamainallur, Kancheepuram Dist.	**Subject Expert**	
4	**Dr. V.Vijayan** Associate Dean Research Sri Balaji Vidyapeeth (Deemed to be University) Puducherry	**Subject Expert**	
5	**Dr. E. Anandakirouchenane** Controlling Authority cum Licensing Authority, Department of Drug Control, Puducherry.	**Member**	
6	**Dr. N. Kannappan** Professor Department of Pharmacy, Annamalai University, Annamalai Nagar 608002	**Subject Expert**	
7.	**Dr.A.A.Arivalagar** Dean Academics Sri Manakula Vinayagar Engineering College, Madagadipet, Puducherry	**Special Invitee**	
8.	**Dr. S.Anbumalar** Dean Academics Sri Manakula Vinayagar Engineering College, Madagadipet, Puducherry	**Special Invitee**	

9.	**Mr. S. Mathivanan** Assistant Professor, SMVEC Pharmacy College, Madagadipet, Puducherry – 605501	**Member**	6/3/25
10.	**Mrs. B. Durgambigai** Assistant Professor, SMVEC Pharmacy College, Madagadipet, Puducherry -605107	**Member**	6.3.'25
11.	**Dr.K.RamPrasad** Assistant Professor, SMVEC Pharmacy College, Madagadipet, Puducherry -605107	**Member**	6/3/25

Chairperson /BOS/Pharmacy
(Dr.M.Dhanalakshmi)

Dean Academics
(Dr.A.A.Arivalagar)

Dean Academics
(Dr.S.Anbumalar)

Director cum Principal
(Dr.V.S.K.Venkatachalapathy)

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4th BOS-ANNEXURE I&II

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Dean Pharmacy SMVEC <deanpharmacy@smvec.ac.in>
to Koumaravelou, nishamathew, Kannappan, DEAN, V.Vijayan, e.anandakirouchenane

Tue, Feb 25, 2:58 PM

Respected Madam/Sir

Greetings. As discussed during our phone conversation, we have scheduled the 4th Board of Studies (BOS) meeting for March 6th, from 2:30 PM to 4:30 PM. Kindly review the attached ANNEXURE I & II and acknowledge receipt.

Thank you.

–
With Regards,
Dr. M. Dhanalakshmi
Dean
SMVEC- Pharmacy College
Puducherry

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Dr. V.Vijayan <vijayanv2@gmail.com> Feb 27, 2025, 3:09 PM
to me, Koumaravelou, nishamathew, Kannappan, DEAN, e.anandakirouchenane

Dear Madam,

Thanks for the invitation. I will attend the meeting.

Regards

Dr.Vijayan,M.Pharm,PhD.,
H/P:+919751391078.

Kannappan Nagappan <kannappanpharmacy@gmail.com> Feb 27, 2025, 3:56 PM
to me

Respected sir/madam
I noted the contents of the mail and I will be present on 06.03.2025 for the BOS meeting

With regards
Dr.N.Kannappan

Dean
SMVEC Pharmacy College
Madagadipet,
Puducherry.

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koumaravelou <koumar@gmail.com>
to me

Feb 27, 2025, 6:23 PM

Greetings of the day

Thanks for the BOS invitation.

I will attend the meeting

Thanks & Regards
Dr Kailasam Koumaravelou

Nisha Mathew <nishamathew@yahoo.com>
to Kannappan, DEAN, V.Vijayan, e.anandakirouchenane@py.gov.in, Koumaravelou, me

Mar 2, 2025, 2:07 AM

Dear Dr. Dhanalakshmi,

Thank you for inviting me for the 4th Board of Studies meeting on 6th March at 2.30 PM. I will be attending the meeting online. Please share the link for the meeting. I have gone through the agenda shared by you. It looks fine for me.

With best regards,

Dr. Nisha Mathew
Scientist-G (retired) & Former Head

Dean
SMVEC Pharmacy College
Madagadipet,
Puducherry.

ANANDAKIROUCHENANE E <e.anandakirouchenane@py.gov.in> Mar 3, 2025, 3:55 PM
to me

Madam,

Noted. will attend.

With regards,

Dr.E.Anandakirouchenane,
Controlling cum Licensing Authority,
Department of Drugs Control
U T Puducherry

---- On Tue, 25 Feb 2025 14:58:49 +0530 **<deanpharmacy@smvec.ac.in>** wrote ---

Dean Pharmacy SMVEC <deanpharmacy@smvec.ac.in> Mar 3, 2025, 4:50 PM

M. Q

Dean
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Puducherry.

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4th BOS-Minutes of Meeting report

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Dean Pharmacy SMVEC <deanpharmacy@smvec.ac.in>
to ANANDAKIROUCHENANE, Kannappan, Koumaravelou, V.Vijayan, nishamathew

Tue, Mar 25, 2:57 PM

Respected Sir/Madam
Greetins.Here with i am attaching the 4th BOS-Minutes of Meeting report as we discussed in Agenda in the 4th (BOS) Board of Studies held on 06/03/2025 in SMVEC PHARMACY COLLEGE. Kindly review and acknowledge the report.

–
With Regards,
Dr. M. Dhanalakshmi
Dean
SMVEC- Pharmacy College
Puducherry

2 Attachments • Scanned by Gmail

syllabus-GMP,GL..

BOS minutes - for.

Dean
SMVEC Pharmacy College
Madagadipet,
Puducherry.

Annexure I

Syllabi of VI semester B.Pharm Programme (as prescribed by PCI) and the syllabus for Skill Development Course (SD-003)

Table-VI: Course of study for semester VI

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP601T	Medicinal Chemistry III – Theory	3	1	4
BP602T	Pharmacology III – Theory	3	1	4
BP603T	Herbal Drug Technology – Theory	3	1	4
BP604T	Biopharmaceutics and Pharmacokinetics –Theory	3	1	4
BP605T	Pharmaceutical Biotechnology – Theory	3	1	4
BP606T	Quality Assurance –Theory	3	1	4
BP607P	Medicinal chemistry III – Practical	4	-	2
BP608P	Pharmacology III – Practical	4	-	2
BP609P	Herbal Drug Technology – Practical	4	-	2
Mandatory SD-003	GLP/GMP/RA			
Total		**30**	**6**	**30**

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SEMESTER VI

BP601T. MEDICINAL CHEMISTRY – III (Theory)

45 Hours

Scope: This subject is designed to impart fundamental knowledge on the structure, chemistry and therapeutic value of drugs. The subject emphasis on modern techniques of rational drug design like quantitative structure activity relationship (QSAR), Prodrug concept, combinatorial chemistry and Computer aided drug design (CADD). The subject also emphasizes on the chemistry, mechanism of action, metabolism, adverse effects, Structure Activity Relationships (SAR), therapeutic uses and synthesis of important drugs.

Objectives: Upon completion of the course student shall be able to

1. Understand the importance of drug design and different techniques of drug design.
2. Understand the chemistry of drugs with respect to their biological activity.
3. Know the metabolism, adverse effects and therapeutic value of drugs.
4. Know the importance of SAR of drugs.

Course Content:

Study of the development of the following classes of drugs, Classification, mechanism of action, uses of drugs mentioned in the course, Structure activity relationship of selective class of drugs as specified in the course and synthesis of drugs superscripted by (*)

UNIT – I **10 Hours**

Antibiotics

Historical background, Nomenclature, Stereochemistry, Structure activity relationship, Chemical degradation classification and important products of the following classes.

β-Lactam antibiotics: Penicillin, Cepholosporins, β- Lactamase inhibitors, Monobactams

Aminoglycosides: Streptomycin, Neomycin, Kanamycin

Tetracyclines: Tetracycline,Oxytetracycline, Chlortetracycline, Minocycline, Doxycycline

UNIT – II **10 Hours**

Antibiotics

Historical background, Nomenclature, Stereochemistry, Structure activity relationship, Chemical degradation classification and important products of the following classes.

Macrolide: Erythromycin Clarithromycin, Azithromycin.

Miscellaneous: Chloramphenicol*, Clindamycin.

Prodrugs: Basic concepts and application of prodrugs design.

Antimalarials: Etiology of malaria.

Quinolines: SAR, Quinine sulphate, Chloroquine*, Amodiaquine, Primaquine phosphate, Pamaquine*, Quinacrine hydrochloride, Mefloquine.

Biguanides and dihydro triazines: Cycloguanil pamoate, Proguanil.

Miscellaneous: Pyrimethamine, Artesunete, Artemether, Atovoquone.

UNIT – III **10 Hours**

Anti-tubercular Agents

Synthetic anti tubercular agents: Isoniozid*, Ethionamide, Ethambutol, Pyrazinamide, Para amino salicylic acid.*

Anti tubercular antibiotics: Rifampicin, Rifabutin, Cycloserine Streptomycine, Capreomycin sulphate.

Urinary tract anti-infective agents

Quinolones: SAR of quinolones, Nalidixic Acid,Norfloxacin, Enoxacin, Ciprofloxacin*, Ofloxacin, Lomefloxacin, Sparfloxacin, Gatifloxacin, Moxifloxacin

Miscellaneous: Furazolidine, Nitrofurantoin*, Methanamine.

Antiviral agents:

Amantadine hydrochloride, Rimantadine hydrochloride, Idoxuridine trifluoride, Acyclovir*, Gancyclovir, Zidovudine, Didanosine, Zalcitabine, Lamivudine, Loviride, Delavirding, Ribavirin, Saquinavir, Indinavir, Ritonavir.

UNIT – IV **08 Hours**

Antifungal agents:

Antifungal antibiotics: Amphotericin-B, Nystatin, Natamycin, Griseofulvin.

Synthetic Antifungal agents: Clotrimazole, Econazole, Butoconazole, Oxiconazole Tioconozole, Miconazole*, Ketoconazole, Terconazole, Itraconazole, Fluconazole, Naftifine hydrochloride, Tolnaftate*.

Anti-protozoal Agents: Metronidazole*, Tinidazole, Ornidazole, Diloxanide, Iodoquinol, Pentamidine Isethionate, Atovaquone, Eflornithine.

Anthelmintics: Diethylcarbamazine citrate*, Thiabendazole, Mebendazole*, Albendazole, Niclosamide, Oxamniquine, Praziquantal, Ivermectin.

Sulphonamides and Sulfones

Historical development, chemistry, classification and SAR of Sulfonamides: Sulphamethizole, Sulfisoxazole, Sulphamethizine, Sulfacetamide*, Sulphapyridine, Sulfamethoxaole*, Sulphadiazine, Mefenide acetate, Sulfasalazine.

Folate reductase inhibitors: Trimethoprim*, Cotrimoxazole.

Sulfones: Dapsone*.

UNIT – V **07 Hours**

Introduction to Drug Design

Various approaches used in drug design.

Physicochemical parameters used in quantitative structure activity relationship (QSAR) such as partition coefficient, Hammet's electronic parameter, Tafts steric parameter and Hansch analysis.

Pharmacophore modeling and docking techniques.

Combinatorial Chemistry: Concept and applications of combinatorial chemistry: solid phase and solution phase synthesis.

BP607P. MEDICINAL CHEMISTRY- III (Practical)

4 Hours / week

I Preparation of drugs and intermediates

1 Sulphanilamide

2 7-Hydroxy, 4-methyl coumarin

3 Chlorobutanol

4 Triphenyl imidazole

5 Tolbutamide

6 Hexamine

II Assay of drugs

1 Isonicotinic acid hydrazide

2 Chloroquine

3 Metronidazole

4 Dapsone

5 Chlorpheniramine maleate

6 Benzyl penicillin

III Preparation of medicinally important compounds or intermediates by Microwave irradiation technique

IV Drawing structures and reactions using chem draw®

V Determination of physicochemical properties such as logP, clogP, MR, Molecular weight, Hydrogen bond donors and acceptors for class of drugs course content using drug design software Drug likeliness screening (Lipinskies RO5)

Recommended Books (Latest Editions)

1. Wilson and Giswold's Organic medicinal and Pharmaceutical Chemistry.
2. Foye's Principles of Medicinal Chemistry.
3. Burger's Medicinal Chemistry, Vol I to IV.
4. Introduction to principles of drug design- Smith and Williams.
5. Remington's Pharmaceutical Sciences.
6. Martindale's extra pharmacopoeia.

7. Organic Chemistry by I.L. Finar, Vol. II.
8. The Organic Chemistry of Drug Synthesis by Lednicer, Vol. 1-5.
9. Indian Pharmacopoeia.
10. Text book of practical organic chemistry- A.I.Vogel.

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BP602 T. PHARMACOLOGY-III (Theory)

45 Hours

Scope: This subject is intended to impart the fundamental knowledge on various aspects (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on respiratory and gastrointestinal system, infectious diseases, immuno-pharmacology and in addition,emphasis on the principles of toxicology and chronopharmacology.

Objectives: Upon completion of this course the student should be able to:

1. understand the mechanism of drug action and its relevance in the treatment of different infectious diseases
2. comprehend the principles of toxicology and treatment of various poisoningsand
3. appreciate correlation of pharmacology with related medical sciences.

Course Content:

UNIT-I **10hours**

1. Pharmacology of drugs acting on Respiratory system

a. Anti -asthmatic drugs
b. Drugs used in the management of COPD
c. Expectorants and antitussives
d. Nasal decongestants
e. Respiratory stimulants

2. Pharmacology of drugs acting on the Gastrointestinal Tract

a. Antiulcer agents.
b. Drugs for constipation and diarrhoea.
c. Appetite stimulants and suppressants.
d. Digestants and carminatives.
e. Emetics and anti-emetics.

UNIT-II **10hours**

3. Chemotherapy

a. General principles of chemotherapy.

b. Sulfonamides and cotrimoxazole.

c. Antibiotics- Penicillins, cephalosporins, chloramphenicol, macrolides, quinolones and fluoroquinolins, tetracycline and aminoglycosides

UNIT-III **10hours**

3. Chemotherapy

a. Antitubercular agents

b. Antileprotic agents

c. Antifungal agents

d. Antiviral drugs

e.Anthelmintics

f. Antimalarial drugs

g. Antiamoebic agents

UNIT-IV **08hours**

3. Chemotherapy

l. Urinary tract infections and sexually transmitted diseases.

m. Chemotherapy of malignancy.

4. Immunopharmacology

a. Immunostimulants

b. Immunosuppressant

Protein drugs, monoclonal antibodies, target drugs to antigen, biosimilars

UNIT-V **07hours**

5. Principles of toxicology

a. Definition and basic knowledge of acute, subacute and chronic toxicity.

b. Definition and basic knowledge of genotoxicity, carcinogenicity, teratogenicity and mutagenicity

c. General principles of treatment of poisoning

d. Clinical symptoms and management of barbiturates, morphine, organophosphosphorus compound and lead, mercury and arsenic poisoning.

6. Chronopharmacology

a. Definition of rhythm and cycles.

b. Biological clock and their significance leading to chronotherapy.

M.Q

Dean

SMVEC Pharmacy College

BP 608 P. PHARMACOLOGY-III (Practical)

4Hrs/Week

1. Dose calculation in pharmacological experiments
2. Antiallergic activity by mast cell stabilization assay
3. Study of anti-ulcer activity of a drug using pylorus ligand (SHAY) rat model and NSAIDS induced ulcer model.
4. Study of effect of drugs on gastrointestinal motility
5. Effect of agonist and antagonists on guinea pig ileum
6. Estimation of serum biochemical parameters by using semi- autoanalyser
7. Effect of saline purgative on frog intestine
8. Insulin hypoglycemic effect in rabbit
9. Test for pyrogens (rabbit method)
10. Determination of acute oral toxicity (LD50) of a drug from a given data
11. Determination of acute skin irritation / corrosion of a test substance
12. Determination of acute eye irritation / corrosion of a test substance
13. Calculation of pharmacokinetic parameters from a given data
14. Biostatistics methods in experimental pharmacology(student's t test, ANOVA)
15. Biostatistics methods in experimental pharmacology (Chi square test, Wilcoxon Signed Rank test)

**Experiments are demonstrated by simulated experiments/videos*

Recommended Books (Latest Editions)

1. Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's Pharmacology, Churchil Livingstone Elsevier
2. Katzung B. G., Masters S. B., Trevor A. J., Basic and clinical pharmacology, Tata Mc Graw-Hill
3. Goodman and Gilman's, The Pharmacological Basis of Therapeutics
4. Marry Anne K. K., Lloyd Yee Y., Brian K. A., Robbin L.C., Joseph G. B., Wayne A. K., Bradley R.W., Applied Therapeutics, The Clinical use of Drugs. The Point Lippincott Williams & Wilkins
5. Mycek M.J, Gelnet S.B and Perper M.M. Lippincott's Illustrated Reviews-Pharmacology
6. K.D.Tripathi. Essentials of Medical Pharmacology, , JAYPEE Brothers Medical Publishers (P) Ltd, New Delhi.
7. Sharma H. L., Sharma K. K., Principles of Pharmacology, Paras medical publisher Modern Pharmacology with clinical Applications, by Charles R.Craig& Robert,
8. Ghosh MN. Fundamentals of Experimental Pharmacology. Hilton & Company, Kolkata,
9. Kulkarni SK. Handbook of experimental pharmacology. VallabhPrakashan,
10. N.Udupa and P.D. Gupta, Concepts in Chronopharmacology.

BP 603 T. HERBAL DRUG TECHNOLOGY (Theory)

45 hours

Scope: This subject gives the student the knowledge of basic understanding of herbal drug industry, the quality of raw material, guidelines for quality of herbal drugs, herbal cosmetics, natural sweeteners, nutraceutical etc. The subject also emphasizes on Good Manufacturing Practices (GMP), patenting and regulatory issues of herbal drugs

Objectives: Upon completion of this course the student should be able to:

1. understand raw material as source of herbal drugs from cultivation to herbal drug product
2. know the WHO and ICH guidelines for evaluation of herbal drugs
3. know the herbal cosmetics, natural sweeteners, nutraceuticals
4. appreciate patenting of herbal drugs, GMP .

Course content:

UNIT-I **11 Hours**

Herbs as raw materials

Definition of herb, herbal medicine, herbal medicinal product, herbal drug preparation
Source of Herbs
Selection, identification and authentication of herbal materials
Processing of herbal raw material

Biodynamic Agriculture

Good agricultural practices in cultivation of medicinal plants including Organic farming.
Pest and Pest management in medicinal plants: Biopesticides/Bioinsecticides.

Indian Systems of Medicine

a) Basic principles involved in Ayurveda, Siddha, Unani and Homeopathy
b) Preparation and standardization of Ayurvedic formulations viz Aristas and Asawas, Ghutika,Churna, Lehya and Bhasma.

UNIT-II **7 Hours**

Nutraceuticals

General aspects, Market, growth, scope and types of products available in the market. Health benefits and role of Nutraceuticals in ailments like Diabetes, CVS diseases, Cancer, Irritable bowel syndrome and various Gastro intestinal diseases.
Study of following herbs as health food: Alfaalfa, Chicory, Ginger, Fenugreek, Garlic, Honey, Amla, Ginseng, Ashwagandha, Spirulina

Herbal-Drug and Herb-Food Interactions: General introduction to interaction and classification. Study of following drugs and their possible side effects and interactions: Hypercium, kava-kava, Ginkobiloba, Ginseng, Garlic, Pepper & Ephedra.

UNIT-III **10 Hours**

Herbal Cosmetics

Sources and description of raw materials of herbal origin used via, fixed oils, waxes, gums colours, perfumes, protective agents, bleaching agents, antioxidants in products such as skin care, hair care and oral hygiene products.

Herbal excipients:
Herbal Excipients – Significance of substances of natural origin as excipients – colorants, sweeteners, binders, diluents, viscosity builders, disintegrants, flavors & perfumes.

Herbal formulations :
Conventional herbal formulations like syrups, mixtures and tablets and Novel dosage forms like phytosomes

UNIT- IV **10 Hours**

Evaluation of Drugs WHO & ICH guidelines for the assessment of herbal drugs
Stability testing of herbal drugs.

Patenting and Regulatory requirements of natural products:
a) Definition of the terms: Patent, IPR, Farmers right, Breeder's right, Bioprospecting and Biopiracy
b) Patenting aspects of Traditional Knowledge and Natural Products. Case study of Curcuma & Neem.

Regulatory Issues - Regulations in India (ASU DTAB, ASU DCC), Regulation of manufacture of ASU drugs - Schedule Z of Drugs & Cosmetics Act for ASU drugs.

UNIT-V **07 Hours**

General Introduction to Herbal Industry
Herbal drugs industry: Present scope and future prospects.
A brief account of plant based industries and institutions involved in work on medicinal and aromatic plants in India.

Schedule T – Good Manufacturing Practice of Indian systems of medicine
Components of GMP (Schedule – T) and its objectives
Infrastructural requirements, working space, storage area, machinery and equipments, standard operating procedures, health and hygiene, documentation and records.

BP 609 P. HERBAL DRUG TECHNOLOGY (Practical)

4 hours/ week

1. To perform preliminary phytochemical screening of crude drugs.
2. Determination of the alcohol content of Asava and Arista
3. Evaluation of excipients of natural origin
4. Incorporation of prepared and standardized extract in cosmetic formulations like creams, lotions and shampoos and their evaluation.
5. Incorporation of prepared and standardized extract in formulations like syrups, mixtures and tablets and their evaluation as per Pharmacopoeial requirements.
6. Monograph analysis of herbal drugs from recent Pharmacopoeias
7. Determination of Aldehyde content
8. Determination of Phenol content
9. Determination of total alkaloids

Recommended Books: (Latest Editions)

1. Textbook of Pharmacognosy by Trease & Evans.
2. Textbook of Pharmacognosy by Tyler, Brady & Robber.
3. Pharmacognosy by Kokate, Purohit and Gokhale
4. Essential of Pharmacognosy by Dr.S.H.Ansari
5. Pharmacognosy & Phytochemistry by V.D.Rangari
6. Pharmacopoeal standards for Ayurvedic Formulation (Council of Research in Indian Medicine & Homeopathy)
7. Mukherjee, P.W. Quality Control of Herbal Drugs: An Approach to Evaluation of Botanicals. Business Horizons Publishers, New Delhi, India, 2002.

BP 604 T. BIOPHARMACEUTICS AND PHARMACOKINETICS
(Theory)

45 Hours

Scope: This subject is designed to impart knowledge and skills of Biopharmaceutics and pharmacokinetics and their applications in pharmaceutical development, design of dose and dosage regimen and in solving the problems arised therein.

Objectives: Upon completion of the course student shall be able to:

1. Understand the basic concepts in biopharmaceutics and pharmacokinetics and their significance.
2. Use of plasma drug concentration-time data to calculate the pharmacokinetic parameters to describe the kinetics of drug absorption, distribution, metabolism, excretion, elimination.
3. To understand the concepts of bioavailability and bioequivalence of drug products and their significance.
4. Understand various pharmacokinetic parameters, their significance & applications.

Course Content:

UNIT-I **10 Hours**

Introduction to Biopharmaceutics

Absorption; Mechanisms of drug absorption through GIT, factors influencing drug absorption though GIT, absorption of drug from Non per oral extra-vascular routes, **Distribution** Tissue permeability of drugs, binding of drugs, apparent, volume of drug distribution, plasma and tissue protein binding of drugs, factors affecting protein-drug binding. Kinetics of protein binding, Clinical significance of protein binding of drugs

UNIT- II **10 Hours**

Elimination: Drug metabolism and basic understanding metabolic pathways renal excretion of drugs, factors affecting renal excretion of drugs, renal clearance, Non renal routes of drug excretion of drugs

Bioavailability and Bioequivalence: Definition and Objectives of bioavailability, absolute and relative bioavailability, measurement of bioavailability, *in-vitro* drug dissolution models, *in-vitro-in-vivo* correlations, bioequivalence studies, methods to enhance the dissolution rates and bioavailability of poorly soluble drugs.

UNIT- III **10 Hours**

Pharmacokinetics: Definition and introduction to Pharmacokinetics, Compartment models, Non compartment models, physiological models, One compartment open model. (a). Intravenous Injection (Bolus) (b). Intravenous infusion and (c) Extra vascular administrations. Pharmacokinetics parameters - K_E ,t1/2,Vd,AUC,Ka, Clt and CL_R- definitions methods of eliminations, understanding of their significance and application

UNIT- IV **08 Hours**

Multicompartment models: Two compartment open model. IV bolus
Kinetics of multiple dosing, steady state drug levels, calculation of loading and mainetnance doses and their significance in clinical settins.

UNIT- V **07 Hours**

Nonlinear Pharmacokinetics: a. Introduction, b. Factors causing Non-linearity.
c. Michaelis-menton method of estimating parameters, Explanation with example of drugs.

Recommended Books: (Latest Editions)

1. Biopharmaceutics and Clinical Pharmacokinetics by, Milo Gibaldi.
2. Biopharmaceutics and Pharmacokinetics; By Robert F Notari
3. Applied biopharmaceutics and pharmacokinetics, Leon Shargel and Andrew B.C.YU 4th edition,Prentice-Hall Inernational edition.USA
4. Bio pharmaceutics and Pharmacokinetics-A Treatise, By D. M. Brahmankar and Sunil B.Jaiswal,Vallabh Prakashan Pitampura, Delhi
5. Pharmacokinetics: By Milo Glbaldi Donald, R. Mercel Dekker Inc.
6. Hand Book of Clinical Pharmacokinetics, By Milo Gibaldi and Laurie Prescott by ADIS Health Science Press.
7. Biopharmaceutics; By Swarbrick
8. Clinical Pharmacokinetics, Concepts and Applications: By Malcolm Rowland and
9. Thomas, N. Tozen, Lea and Febrger, Philadelphia, 1995.
10. Dissolution, Bioavailability and Bioequivalence, By Abdou H.M, Mack, Publishing Company,Pennsylvania 1989.
11. Biopharmaceutics and Clinical Pharmacokinetics-An introduction 4th edition Revised and expanded by Rebort F Notari Marcel Dekker Inn, New York and Basel, 1987.
12. Remington's Pharmaceutical Sciences, By Mack Publishing Company, Pennsylvnia

BP 605 T. PHARMACEUTICAL BIOTECHNOLOGY (Theory)

45 Hours

Scope:

- Biotechnology has a long promise to revolutionize the biological sciences and technology.
- Scientific application of biotechnology in the field of genetic engineering, medicine and fermentation technology makes the subject interesting.
- Biotechnology is leading to new biological revolutions in diagnosis, prevention and cure of diseases, new and cheaper pharmaceutical drugs.
- Biotechnology has already produced transgenic crops and animals and the future promises lot more.
- It is basically a research-based subject.

Objectives: Upon completion of the subject student shall be able to;

1. Understanding the importance of Immobilized enzymes in Pharmaceutical Industries
2. Genetic engineering applications in relation to production of pharmaceuticals
3. Importance of Monoclonal antibodies in Industries
4. Appreciate the use of microorganisms in fermentation technology

Unit I **10 Hours**

a) Brief introduction to Biotechnology with reference to Pharmaceutical Sciences.

b) Enzyme Biotechnology- Methods of enzyme immobilization and applications.

c) Biosensors- Working and applications of biosensors in Pharmaceutical Industries.

d) Brief introduction to Protein Engineering.

e) Use of microbes in industry. Production of Enzymes- General consideration - Amylase, Catalase, Peroxidase, Lipase, Protease, Penicillinase.

f) Basic principles of genetic engineering.

Unit II **10 Hours**

a) Study of cloning vectors, restriction endonucleases and DNA ligase.

b) Recombinant DNA technology. Application of genetic engineering in medicine.

c) Application of r DNA technology and genetic engineering in the production of:

i) Interferon ii) Vaccines- hepatitis- B iii) Hormones-Insulin.

d) Brief introduction to PCR

Unit III

10 Hours

Types of immunity- humoral immunity, cellular immunity

a) Structure of Immunoglobulins

b) Structure and Function of MHC

c) Hypersensitivity reactions, Immune stimulation and Immune suppressions.

d) General method of the preparation of bacterial vaccines, toxoids, viral vaccine, antitoxins, serum-immune blood derivatives and other products relative to immunity.

e) Storage conditions and stability of official vaccines

f) Hybridoma technology- Production, Purification and Applications

g) Blood products and Plasma Substituties.

Unit IV

08Hours

a) Immuno blotting techniques- ELISA, Western blotting, Southern blotting.

b) Genetic organization of Eukaryotes and Prokaryotes

c) Microbial genetics including transformation, transduction, conjugation, plasmids and transposons.

d) Introduction to Microbial biotransformation and applications.

e) Mutation: Types of mutation/mutants.

Unit V

07 Hours

a) Fermentation methods and general requirements, study of media, equipments, sterilization methods, aeration process, stirring.

b) Large scale production fermenter design and its various controls.

c) Study of the production of - penicillins, citric acid, Vitamin B12, Glutamic acid, Griseofulvin,

d) Blood Products: Collection, Processing and Storage of whole human blood, dried human plasma, plasma Substituties.

Recommended Books (Latest edition):

1. B.R. Glick and J.J. Pasternak: Molecular Biotechnology: Principles and Applications of RecombinantDNA: ASM Press Washington D.C.
2. RA Goldshy et. al., : Kuby Immunology.
3. J.W. Goding: Monoclonal Antibodies.
4. J.M. Walker and E.B. Gingold: Molecular Biology and Biotechnology by Royal Society of Chemistry.
5. Zaborsky: Immobilized Enzymes, CRC Press, Degraland, Ohio.
6. S.B. Primrose: Molecular Biotechnology (Second Edition) Blackwell Scientific Publication.
7. Stanbury F., P., Whitakar A., and Hall J., S., Principles of fermentation technology, 2nd edition, Aditya books Ltd., New Delhi

BP606T PHARMACEUTICAL QUALITY ASSURANCE (Theory)

45 Hours

Scope: This course deals with the various aspects of quality control and quality assurance aspects of pharmaceutical industries. It deals with the important aspects like cGMP, QC tests, documentation, quality certifications and regulatory affairs.

Objectives: Upon completion of the course student shall be able to:

- understand the cGMP aspects in a pharmaceutical industry
- appreciate the importance of documentation
- understand the scope of quality certifications applicable to pharmaceutical industries
- understand the responsibilities of QA & QC departments

Course content:

UNIT – I

10 Hours

Quality Assurance and Quality Management concepts: Definition and concept of Quality control, Quality assurance and GMP

Total Quality Management (TQM): Definition, elements, philosophies

ICH Guidelines: purpose, participants, process of harmonization, Brief overview of QSEM, with special emphasis on Q-series guidelines, ICH stability testing guidelines

Quality by design (QbD): Definition, overview, elements of QbD program, tools

ISO 9000 & ISO14000: Overview, Benefits, Elements, steps for registration

NABL accreditation : Principles and procedures

UNIT - II

10 Hours

Organization and personnel: Personnel responsibilities, training, hygiene and personal records.

Premises: Design, construction and plant layout, maintenance, sanitation, environmental control, utilities and maintenance of sterile areas, control of contamination.

Equipments and raw materials: Equipment selection, purchase specifications, maintenance, purchase specifications and maintenance of stores for raw materials.

UNIT – III

10 Hours

Quality Control: Quality control test for containers, rubber closures and secondary packing

materials.

Good Laboratory Practices: General Provisions, Organization and Personnel, Facilities, Equipment, Testing Facilities Operation, Test and Control Articles, Protocol for Conduct of a Nonclinical Laboratory Study, Records and Reports, Disqualification of Testing Facilities

UNIT – IV **08 Hours**

Complaints: Complaints and evaluation of complaints, Handling of return good, recalling and waste disposal.

Document maintenance in pharmaceutical industry: Batch Formula Record, Master Formula Record, SOP, Quality audit, Quality Review and Quality documentation, Reports and documents, distribution records.

UNIT – V **07 Hours**

Calibration and Validation: Introduction, definition and general principles of calibration, qualification and validation, importance and scope of validation, types of validation, validation master plan. Calibration of pH meter, Qualification of UV-Visible spectrophotometer, General principles of Analytical method Validation.

Warehousing: Good warehousing practice, materials management

Recommended Books: (Latest Edition)

1. Quality Assurance Guide by organization of Pharmaceutical Products of India.
2. Good Laboratory Practice Regulations, 2nd Edition, Sandy Weinberg Vol. 69.
3. Quality Assurance of Pharmaceuticals- A compendium of Guide lines and Related materials Vol I WHO Publications.
4. A guide to Total Quality Management- Kushik Maitra and Sedhan K Ghosh
5. How to Practice GMP's – P P Sharma.
6. ISO 9000 and Total Quality Management – Sadhank G Ghosh
7. The International Pharmacopoeia – Vol I, II, III, IV- General Methods of Analysis and Quality specification for Pharmaceutical Substances, Excipients and Dosage forms
8. Good laboratory Practices – Marcel Deckker Series
9. ICH guidelines, ISO 9000 and 14000 guidelines

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Mandatory (SD-003) : Good Manufacturing Practice (GMP) / Good laboratory Practice(GLP) / Regulatory Affairs (RA)

Course Objective: This course is designed to impart fundamental knowledge on various Good Regulatory Practices viz., cGMP, GLP and RA for Pharmaceuticals, Cosmetics, Food & Nutraceuticals, Medical devices, In-vitro Diagnostic Medical Devices (IVDs) and biological products and understand the rationale behind these requirements and will propose ways and means of complying with them.

Course Outcome: At completion of this course, it is expected that students will be able to understand

- The key regulatory and compliance elements with respect to Good Manufacturing Practices, Good Laboratory Practices, Good Automated Laboratory Practices and Good Documentation Practices.
- Prepare and implement the check lists and SOPs for various Good Regulatory Practices.

A) Practical inplant training on- GMP/GLP/RA

GMP/GLP

Organization and Personnel Responsibilities, Quality assurance program , Facilities ,Equipment, Reagents and Materials, Test systems (Physical/Chemical, Biological) Test & Reference items ,Standard operating procedures ,Performance of Study , Reporting of results , Archival - Storage of Records and Reports

RA

Application of Permission ,Approval of Clinical Trial, Purpose of QA, Responsibility of Quality Function, Regulatory bodies :CDSCO, FDA – Food & Drug Administration, FDA- An Introduction, ICMR Guidelines

B) **Hands on Training and Workshop**

Medical Devices- Bioethics and Privacy, Biocompatibility and Sterilization Techniques, Design of Clinical Trials, Design Control & Regulatory Requirements. Introduction to specific medical technologies: Biopotentials measurement (EMG, EOG, ECG, EEG), Medical Diagnostics (In-vitro diagnostics), Medical Diagnostics (Imaging), Minimally Invasive Devices, Surgical Tools and Implants.

TEXT AND REFERENCE BOOKS:

1. Good Laboratory Practice Regulations, by Sandy Weinberg, Fourth Edition Drugs and the Pharmaceutical Sciences, Vol.168
2. Good Pharmaceutical Manufacturing practice, Rational and compliance by John Sharp, CRC Press
3. Laboratory Auditing for Quality and Regulatory compliance bu Donald C. Singer, Drugs and the Pharmaceutical Sciences, Vol.150.
4. Regulatory Toxicology by Shayne C. Gad Taylor & Francis
5. Principles and Methods of Toxicology by A. Wallace Hayes
6. https://www.fda.gov/Medical-Devices

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Annexure II

Various Academic activities conducted for B.Pharmacy Programme

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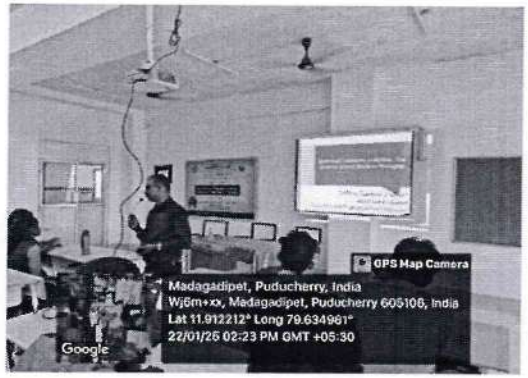
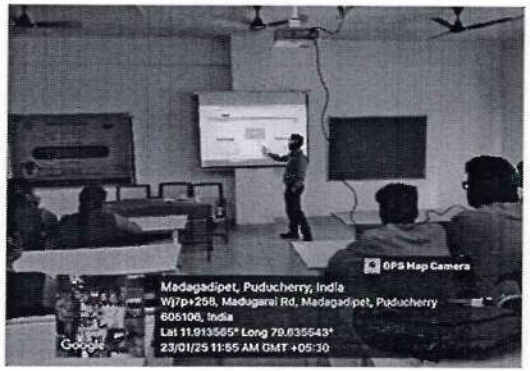
S.No	Topic	Detail of the speaker	Photo
		GUEST LECTURES ORGANISED	
1.	MEDICINAL CHEMISTRY IN ACTION: THE SCIENCE BEHIND MODERN CHEMISTRY.	**Dr. BINOY VARGHESE CHERIYAN, M.Pharm Ph.D.** Associate Professor,Department of Pharmaceutical Chemistry , Saveetha College of Pharmacy	
2.	PHARMACOLOGY EDUCATION WITH COMPUTER- ASSISTED ANIMAL EXPERIMENT STIMULATION	**Dr. V. SURESH, M.Pharm Ph.D,** Associate Professor, Department of Pharmacology, JKKMMRF's -ANNAI JKK SAMPOORANI AMMAL CAMPUS	

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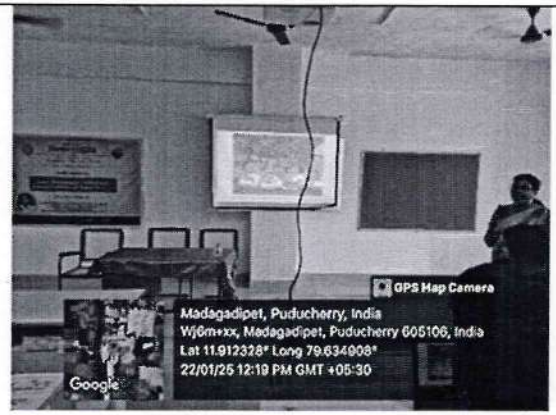
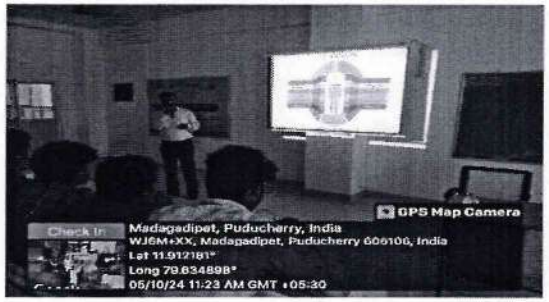
3.	PHARMACOGNOSY IN PHARMACY- BRIDGING TRADITION AND MODERN MEDICINE	**Dr. A. VIJAYALAKSHMI M. PHARM PH. D,** Professor. School of Pharmaceutical Science. VISTAS.	
4.	CHEMISTRY BEHIND THE CURE- ESSENTIAL KNOWLEDGE FOR ASPIRING PHARMACISTS	**Prof.Dr.P.Selvamani,** Head, Department of Pharmaceutical Technology & Center for Excellence in Nano bio Translational Research, University College of Engineering, ANNA UNIVERSITY	
5.	9th NATIONAL AYURVEDA DAY 2024- "*AYURVEDA FOR GLOBAL HEALTH AND INNOVATION*	**Dr. JOY EMMANUEL, BAMS PGDY, PGDBA,** MEDICAL OFFICER (Ayurvedha), CHC, MANNADIPET	

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6.	WORKSHOP ON "TESTING AND TROUBLESHOOTING THE BIOMEDICAL EQUIPMENTS (MEDICAL DEVICES)	**Er. AMUL PRASAD ,** MANAGING DIRECTOR,LEEWAY BIOMEDICAL ,BENGALURU.	
7.	RATIONAL USE OF MEDICINE	**Mr. RAMADAS KUPPUSWAMY,** Managing Director- Goodman Pharmaceutical, Puducherry.	
8.	ADVANCING HEALTHCARE: INNOVATIONS IN COMPUTER-AIDED DRUG DESIGN	**Dr. T. SUNDARRAJAN M. PHARM, Ph. D.** Associate Professor, SRM College of Pharmacy, SRMIST	

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MEMORUNDUM OF UNDERSTANDING (MOU) WITH INDUSTRIES		
1.	GOODMAN PHARMACEUTICALS , Puducherry	
2.	Dr MILTON'S LABORATORIES Pvt Ltd, Puducherry	

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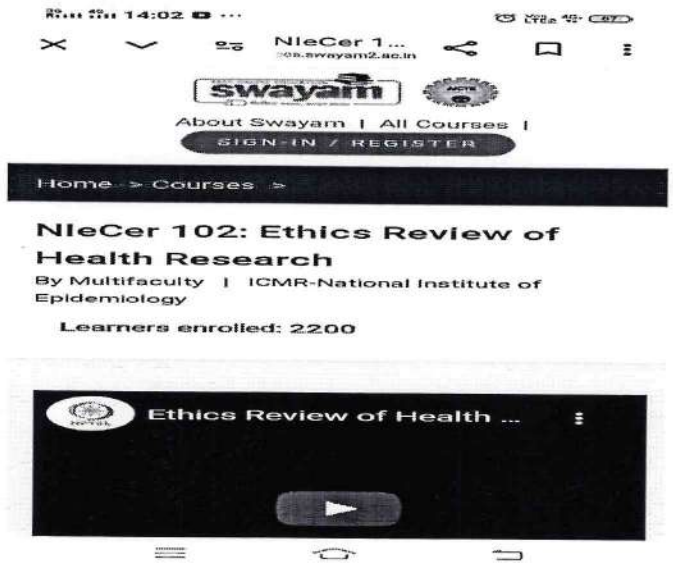
EXTRA – CURRICULUM ACTIVITIES : CONFERENCES,AWARENESS PROGRAM AND SWAYAM COURSE FOR STUDENTS, FDP PROGRAMME BY FACULTIES

1.	SWAYAM-ONLINE CERTIFICATE COURSE	
2.	MALLA REDDY COLLEGE OF PHARMACY-FDP (5 Days)	

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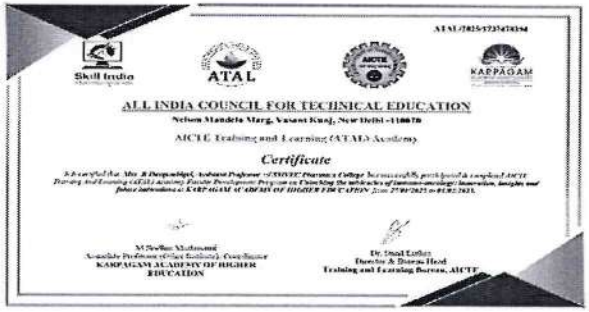
3.	NSS-AWARENESS PROGRAM ON MALARIA	
4.	AICTE-ATAL FDP-KARPAGAM ACADEMY (5DAYS)	

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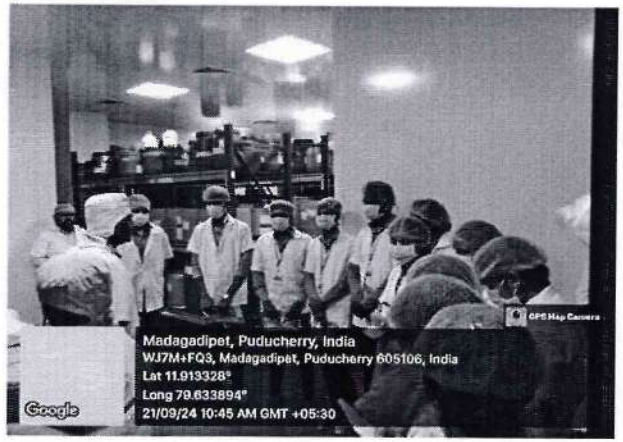
5.	NATIONAL SEMINAR ON "EMERGING STRATEGIES OF QbD APPROACHES IN NANO FORMULATIONS."- KARPAGA VINAYAGA INSTITUTE FOR PHARMACEUTICAL SCIENCES	
6.	INDUSTRIAL VISIT- Dr.Milton's Laboratories	

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Annexure III

List of Examiners for B.Pharm Programme

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Panel of examiners for B. Pharm Programme

S.No	Name of the Examiner	Specialization	Year of Experience	Designation & Institution Name	Mobile No	Mail ID
1.	Dr.Arulanandraj.C.N	Pharm. Anaysis	23	Head, Dept. of. Ph. Analysis, Mother Theresa post graduate and research institute of health science College of Pharmacy, Pondicherry	9994550093	arulanand_raj@yahoo.co.in
2.	Dr.D.Jothieswari	Pharm. Anaysis	15	Professor and Principal, SVCP, Chittor, AP	9989165610	Jothies_82@yahoo.co.in
3.	Dr.Sundar raj	Pharm. Chemistry	13	Associate Professor, SMR University, Chennai	9952550880	sundarrajan.chemistrysundar@gmail.com
4.	Dr.K.Reeta Vijaya Rani	Pharm. Ceutics	25	Professor, Surya school of Pharmacy, Villupuram	9840503339	Reetarani07@yahoo.co.in
5.	Dr.P.Sureshkumar	Pharm. Ceutics	18	Professor, Shanmugha college of Pharmacy, Erode	9704288984	Surae81@gmail.com
6.	Dr.V.Kannabiran	Pharm. Ceutics	16	Professor, Kamalakshmi Pandurangan college of Pharmacy, Ayyampalayam.	8248580112	kanabrian82@gmail.com

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Annexure IV

Assessment Procedure for Mandatory Non-Credit Courses

Mandatory Courses are Non-Credit courses conducted for 40 Hrs. The students must complete it successfully. To ensure holistic education, beyond domain-specific knowledge, additional courses have been incorporated to help pharmacy professionals align with key aspects of healthcare practice. These courses cover essential areas such as Wellness practices, Physical Education, Industrial Skills Development, Sustainable Development Goals, Programming Skills and Artificial Intelligence.

11.2.2 Assessment Procedure for Mandatory Non-Credit Courses :

(i) Mandatory Courses are required to be completed to fulfill the degree requirements. A student has to secure 50 marks out of 100 marks (i.e. 50% of the marks allotted) in the continuous internal evaluation for passing the subject/course. All Mandatory Courses are assessed internally for 100 marks as per Table below.

(ii) The faculty in-charge handling the course will assess the student through activities, quizzes and debates and declare the students as "Pass" on satisfactory completion. A letter grade "P" is awarded to declare pass.

(iii) The mark scored in these courses will not be taken into consideration for the SGPA/CGPA calculations in the grade sheet. No marks or letter grade shall be allotted for all mandatory/non-credit courses.

Table XIV Assessment Procedure for Mandatory courses

Attendance	Internal Test- MCQ Test /Skill Activity/Quiz/Group Discussion/Debate /Poster Presentation	Assignment	Total Marks
10	70	20	100

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