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AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

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Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
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2.3.1. Student centric methods such as experiential learning, participative learning and Problem-solving methodologies are used for enhancing learning experiences and teachers use ICT enabled tools including online resources for effective teaching and learning process.

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Avanthi Institute of Pharmaceutical Sciences

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2.3.1. Student centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences and teachers use ICT enabled tools including online resources for effective teaching and learning process.

This approach recognizes that every student is unique and learns in their own way. It emphasizes active participation, critical thinking, and self-directed learning. Instead of a one-size-fits-all curriculum, student-centric education allows students to explore topics they are passionate about, set their own learning goals, and take ownership of their education. By putting students at the forefront, this approach aims to foster a lifelong love of learning and prepare students to thrive in an ever-changing world. Avanthi Institute of Pharmaceutical Sciences provides an effective platform for students to develop latest skills, knowledge, attitude, values to shape their behavior in the correct manner. All departments conduct innovative programs which stimulate the creative ability of students and provide them a platform to nurture their problem-solving skills and ensure participative learning. The institute organizes annual technical fest in which students showcase their learning in the form of innovative projects. Also, students are motivated to participate in inter college as well as national level competitions.

- 1. Experiential Learning**
- 2. Participation Learning**
- 3. Problem-Solving Methodologies**




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1. EXPERIENTIAL LEARNING:

Experiential Learning is the process of learning by doing. By engaging students in hands-on experiences and reflection, they are better able to connect theories and knowledge learned in the classroom to real-world situations.

1.1. Open Ended Experiments

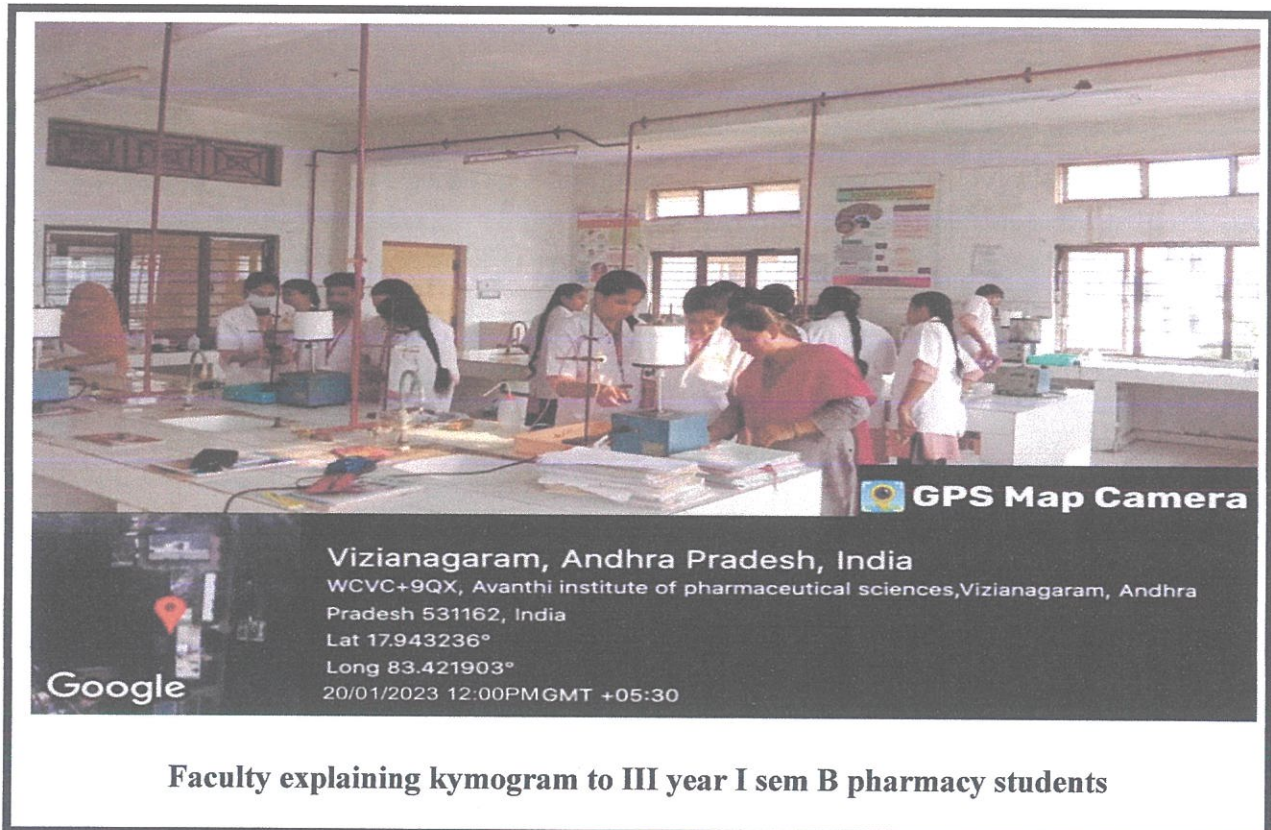
1.2. Working Models

1.3. Simulation Software Experiments

1.4. Internships


1.1 Open Ended Experiment (OEE):

Open Ended Experiment (OEE) inculcate self-thinking and consolation to develop their experiments connected with their subject of study and enhances learning outcomes in research facility works. Students will develop self-directed, reflective, learners who can coordinate information, think fundamentally and work cooperatively with others, which are profoundly helpful in the impressive skill and professional way.



Faculty explaining kymogram to III year I sem B pharmacy students




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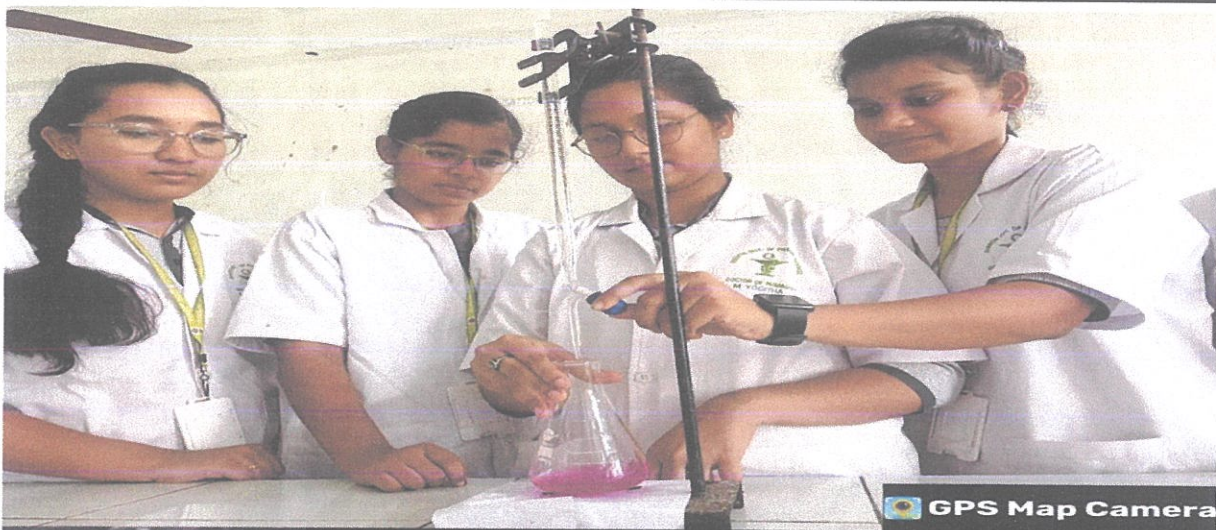
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22/09/2022 11:30AM GMT +05:30

Industrial Pharmacy Lab Performed by III B. Pharm Students



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In-organic Chemistry Lab Performed by I Pharm. D Students

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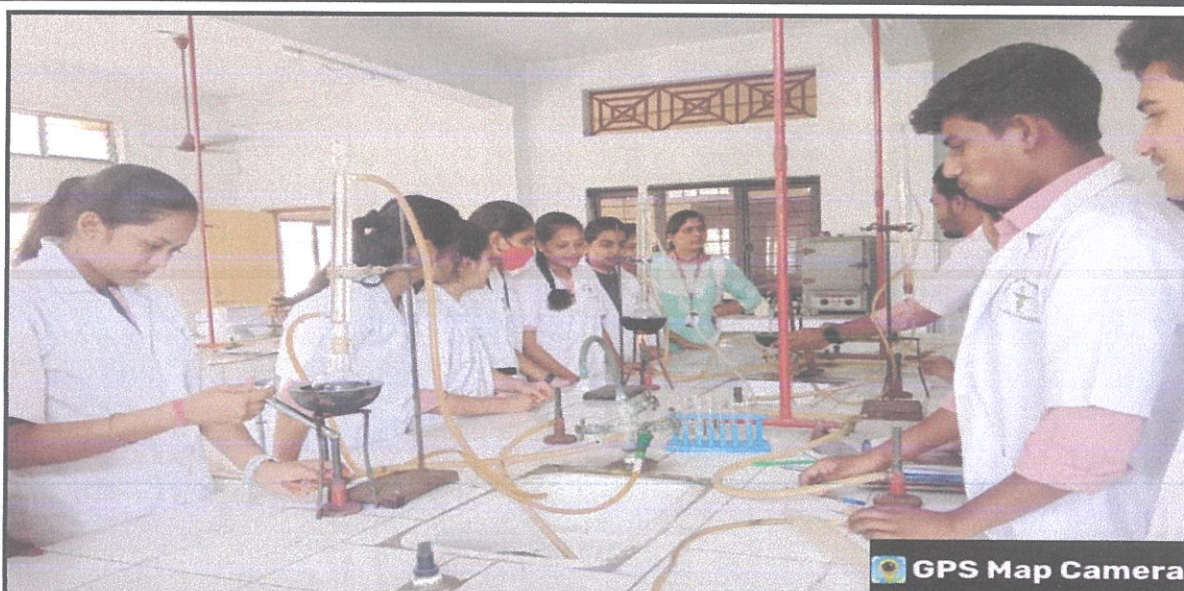
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Organic Chemistry Lab Performed by II B. Pharm Students

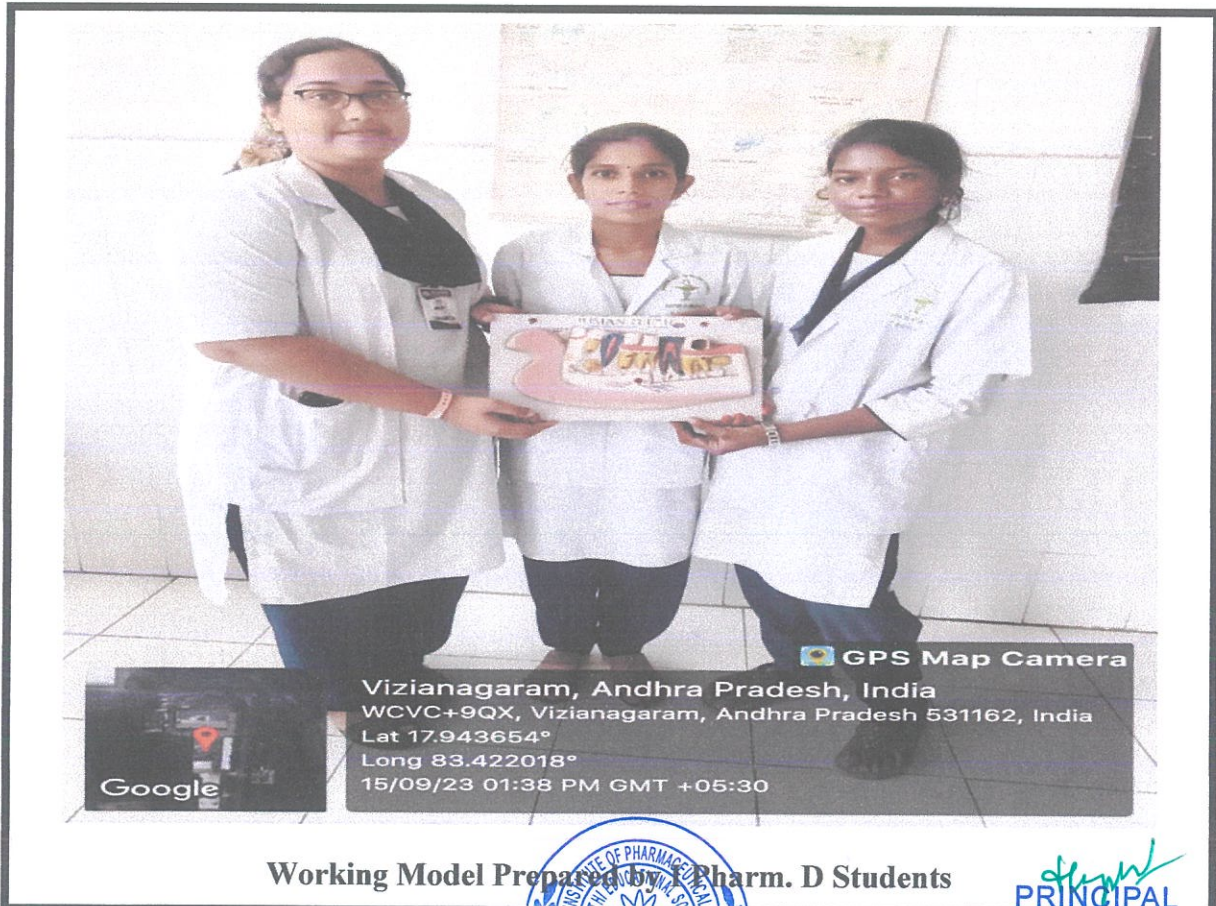
1.2. Working Models:

The adage is to urge the students to plan and show working models of different ideas and concepts. Those models can likewise be shown in specialized occasions for clear vision of the subject. Presentation of working models by the students of Avanathi Institute of Pharmaceutical Sciences. Working models hold significant importance in pharmacy education as they serve as invaluable tools for bridging the gap between theory and practice. Pharmacy, being a field that demands precision and practical expertise, benefits immensely from hands-on learning experiences, Avanathi Institute of Pharmaceutical Sciences provides these models to students with a tangible representation of complex pharmaceutical processes, drug formulations, and equipment, allowing them to gain practical skills and a deeper understanding of the subject matter. Moreover, they create a safe environment for students to practice pharmaceutical procedures, reducing the potential for errors and ensuring they are well-prepared for their future roles in pharmacy practice. Through working models, pharmacy students can actively engage with the material, reinforce their knowledge, and develop the essential skills necessary for success in their careers as pharmacists.

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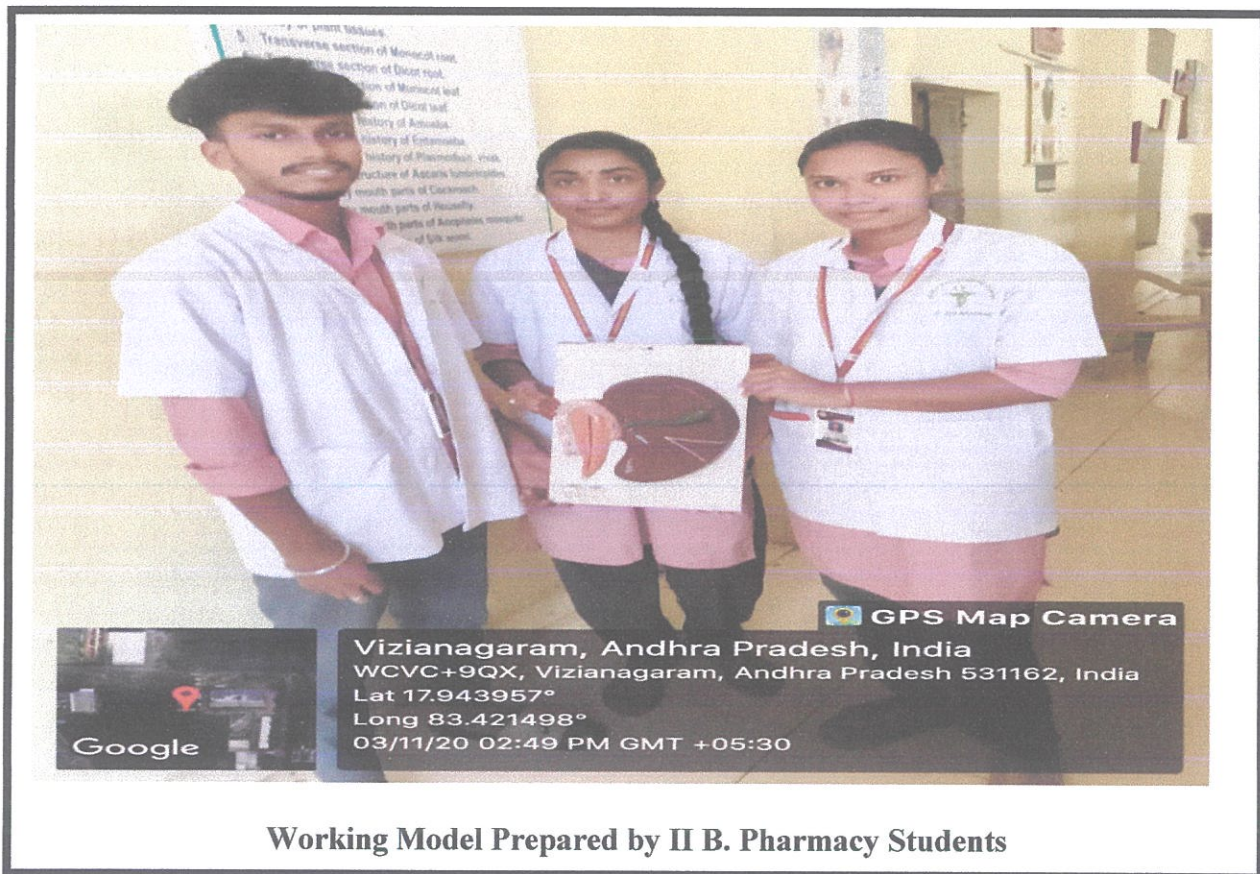
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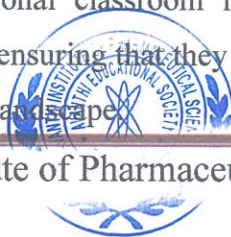
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1.3. Simulation Software Experiments:

Simulation offers unique learning conditions with versatile and reasonable evaluation, which are valuable open doors. Avanthi Institute of Pharmaceutical Sciences procured various simulation software's, like Ex-pharma software. Simulation software plays a vital role in pharmacy education, offering a host of benefits that enhance the learning experience. In the pharmacy field, where precision, safety, and real-world application of knowledge are paramount, simulation software provides students with a unique opportunity to practice a wide range of pharmaceutical tasks and scenarios in a controlled, risk-free environment. Whether it's simulating patient consultations, compounding medications, or conducting virtual clinical trials, these software tools allow students to develop essential skills, improve their decision-making abilities, and gain exposure to diverse pharmaceutical situations. Furthermore, they encourage active engagement, critical thinking, and problem-solving, all of which are essential competencies for future pharmacists. Simulation software not only complements traditional classroom instruction but also prepares pharmacy students to excel in their practical roles, ensuring that they are well-prepared to meet the challenges and demands of the evolving healthcare landscape.



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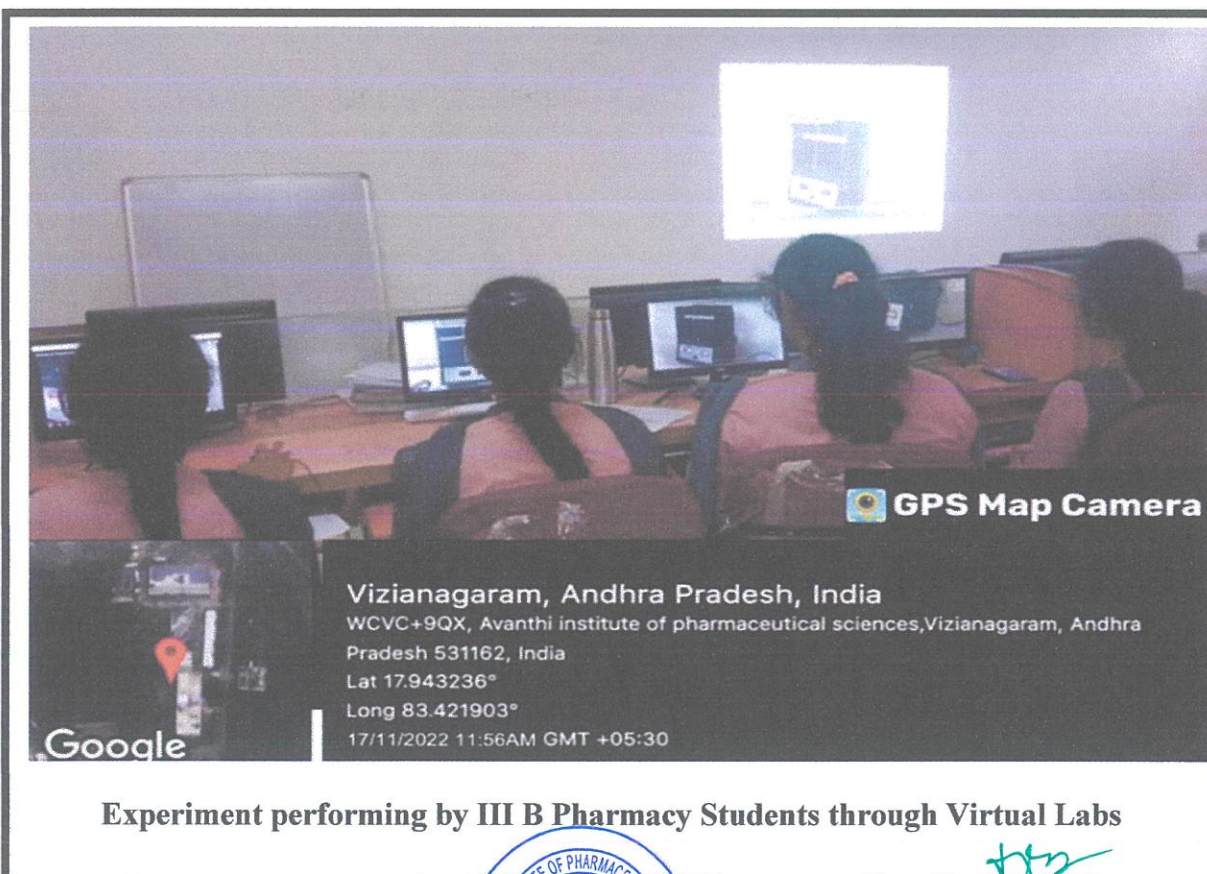
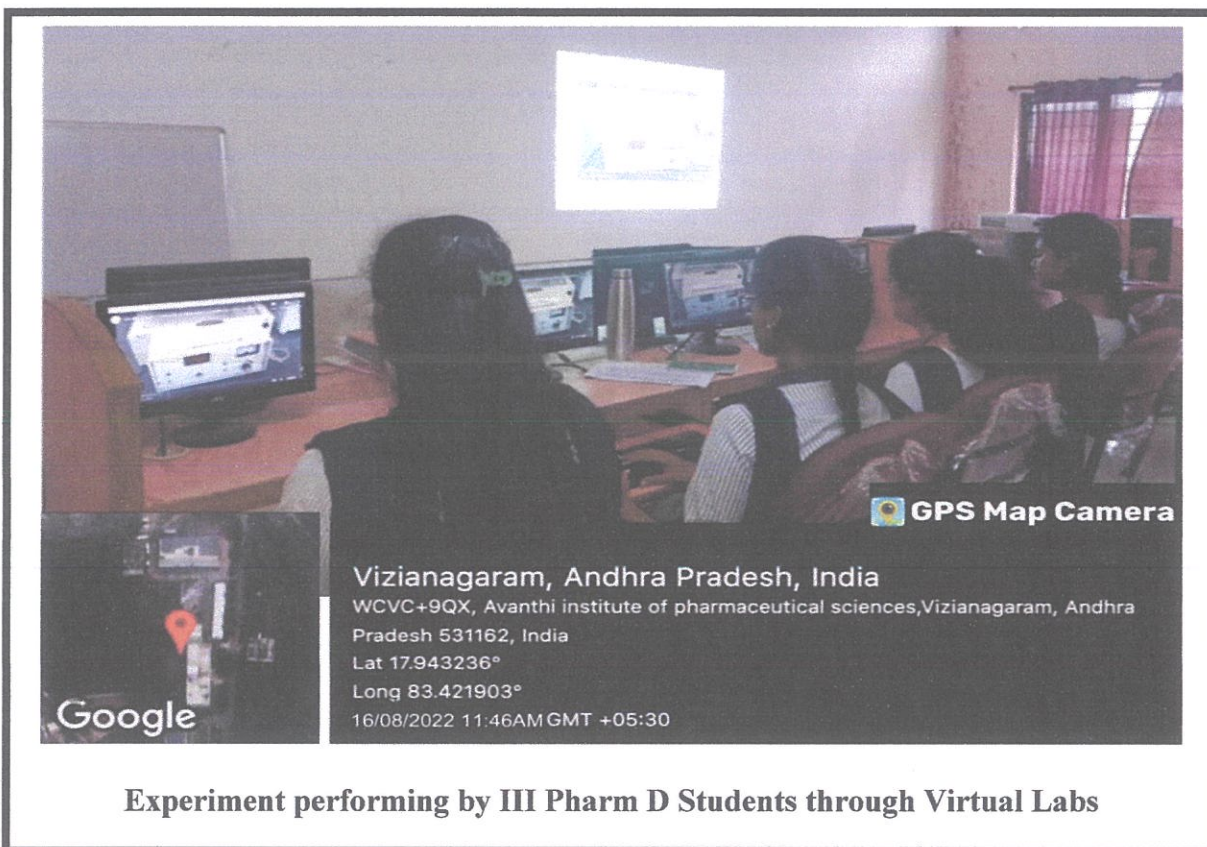
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1.4. Internships:



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1.4. Internships:

An internship is a professional learning experience that offers meaningful, practical work related to a student's field of study or career interest. An internship gives a student the opportunity for career exploration and development, and to learn new skills. It causes the students to traverse information on advanced procedures available in the industries, global organizations and hospitals. Internships hold immense significance in Pharm-D education as they serve as a bridge between classroom learning and real-world pharmacy practice. These hands-on experiences offer Pharm-D students a unique opportunity to apply the knowledge and skills they have acquired in academic settings to clinical and pharmaceutical settings. Internships provide exposure to various facets of pharmacy, including hospital pharmacy, community pharmacy, clinical rotations, and specialized areas like infectious diseases or pediatrics. They enable students to interact with patients, healthcare teams, and diverse pharmaceutical professionals, helping them develop essential clinical and interpersonal skills.

Internships also emphasize the importance of ethical and professional conduct, ensuring that future pharmacists are well-prepared to provide safe and effective patient care. Furthermore, they enable students to explore potential career paths and build a professional network, laying a strong foundation for their future roles as competent and compassionate healthcare providers. Overall, internships are an integral part of Pharm.D education, contributing significantly to the development of well-rounded, clinically competent pharmacists.



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Certificate of Internship

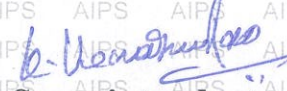
Doctor of Pharmacy (Pharm.D.) Programme




This is to certify that Ms. **NANDAM THANUSHA** bearing Regd. Number **16T51T0015** is a Bonafide Student of Avanathi Institute of Pharmaceutical Sciences from 2016-2022 pursuing **Doctor of Pharmacy (Pharm.D) course**. She has successfully completed the Internship at the Maharaja Institute of Medical Sciences, Vizianagaram in the following Units / Departments as prescribed under regulation 16 and Appendix C of Pharm.D. Regulations 2008 of Pharmacy Council of India, New Delhi.

Department	Date		Total Duration (in Months)
	From	To	
General Medicine	Oct. 2021	Mar. 2022	6
Dermatology	Apl. 2022	May 2022	2
Paediatrics	June 2022	July 2022	2
Gynaecology	Aug. 2022	Sep. 2022	2


Preceptor



Superintendent (MIMS)
 Medical Superintendent
MIMS, General Hospital
VELLIMARLA - 535 217


Principal (AIPS)
CHIEF SUPERINTENDENT & PRINCIPAL
Avanathi Institute of Pharmaceutical Sciences
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CHITTIVALASA S.A.O.
Bhogapuram (M), Vizianagaram Dist

Date:



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Certificate of Internship

Doctor of Pharmacy (Pharm.D.) Programme



This is to certify that Ms. **M. SUPRIYA MANI** bearing Regd. Number **16T51T0027** is a Bonafide Student of Avanathi Institute of Pharmaceutical Sciences from 2016-2022 pursuing **Doctor of Pharmacy (Pharm.D) course**. She has successfully completed the Internship at the Maharaja Institute of Medical Sciences, Vizianagaram in the following Units / Departments as prescribed under regulation 16 and Appendix C of Pharm.D. Regulations 2008 of Pharmacy Council of India, New Delhi.

Department	Date		Total Duration (in Months)
	From	To	
Dermatology	Oct. 2021	Nov. 2021	2
Gynaecology	Dec. 2021	Jan. 2022	2
Paediatrics	Feb. 2022	Mar. 2022	2
General Medicine	Apl. 2022	Sep. 2022	6

Preceptor



Superintendent
(MIMS)

Medical Superintendent
MIMS, General Hospital
NELIMARLA - 535 217

Principal
(AIPS)

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Certificate of Internship

Doctor of Pharmacy (Pharm.D.) Programme



This is to certify that Ms. **POLAKI JYOSHNA** bearing Regd. Number **16T51T0019** is a Bonafide Student of Avanathi Institute of Pharmaceutical Sciences from 2016-2022 pursuing **Doctor of Pharmacy (Pharm.D)** course. She has successfully completed the Internship at the Maharaja Institute of Medical Sciences, Vizianagaram in the following Units / Departments as prescribed under regulation 16 and Appendix C of Pharm.D. Regulations 2008 of Pharmacy Council of India, New Delhi.

Department	Date		Total Duration (in Months)
	From	To	
Gynaecology	Ocr. 2021	Nov. 2021	2
Paediatrics	Dec. 2021	Jan. 2022	2
Dermatology	Feb. 2022	Mar. 2022	2
General Medicine	Apl. 2022	Sep. 2022	6

Preceptor

Superintendent
(MIMS)

Principal
(AIPS)



Medical Superintendent,
MIMS, General Hospital
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Certificate of Internship


Doctor of Pharmacy (Pharm.D.) Programme




This is to certify that Ms. **SHEIK SANJEEDA AMREEN** bearing Regd. Number **16T51T0023** is a Bonafide Student of Avanathi Institute of Pharmaceutical Sciences from 2016-2022 pursuing **Doctor of Pharmacy (Pharm.D)** course. She has successfully completed the Internship at the Maharaja Institute of Medical Sciences, Vizianagaram in the following Units / Departments as prescribed under regulation 16 and Appendix C of Pharm.D. Regulations 2008 of Pharmacy Council of India, New Delhi.

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Gynaecology	Dec. 2021	Jan. 2022	2
Paediatrics	Feb. 2022	Mar. 2022	2
General Medicine	Apl. 2022	Sep. 2022	6


Preceptor
 Dt.
 Cherukupally
 Avanathi Institute of Pharmaceutical Sciences


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 Medical Superintendent
 MIMS, General Hospital
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Certificate of Internship Doctor of Pharmacy (Pharm.D.) Programme



This is to certify that Ms. **NANDULA DURGA SRI LALITHA** bearing Regd. Number **16T51T0016** is a Bonafide Student of Avanathi Institute of Pharmaceutical Sciences from 2016-2022 pursuing **Doctor of Pharmacy (Pharm.D) course**. She has successfully completed the Internship at the Maharaja Institute of Medical Sciences, Vizianagaram in the following Units / Departments as prescribed under regulation 16 and Appendix C of Pharm.D. Regulations 2008 of Pharmacy Council of India, New Delhi.

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Preceptor



Date:

Superintendent
(MIMS)

Medical Superintendent
MIMS, General Hospital
VELLIMARLA - 535-217

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2. PARTICIPATIVE LEARNING:

An approach to teaching and learning that focuses on the learner. It encourages learning by doing, using small groups, concrete materials, open questioning, and peer teaching. For example, learners use practical activities to understand mathematical concepts or work together to solve problems and ask and answer questions. Participatory learning is contrasted with teacher-focused methodologies, which are characterized by learners passively sitting at desks, answering closed questions, and copying from a blackboard. Participatory learning may also be used with teachers and education authorities to support them in analysing their needs, identifying solutions, and developing and implementing a plan of action. In these contexts, it may include community participation, coordination, and analysis.



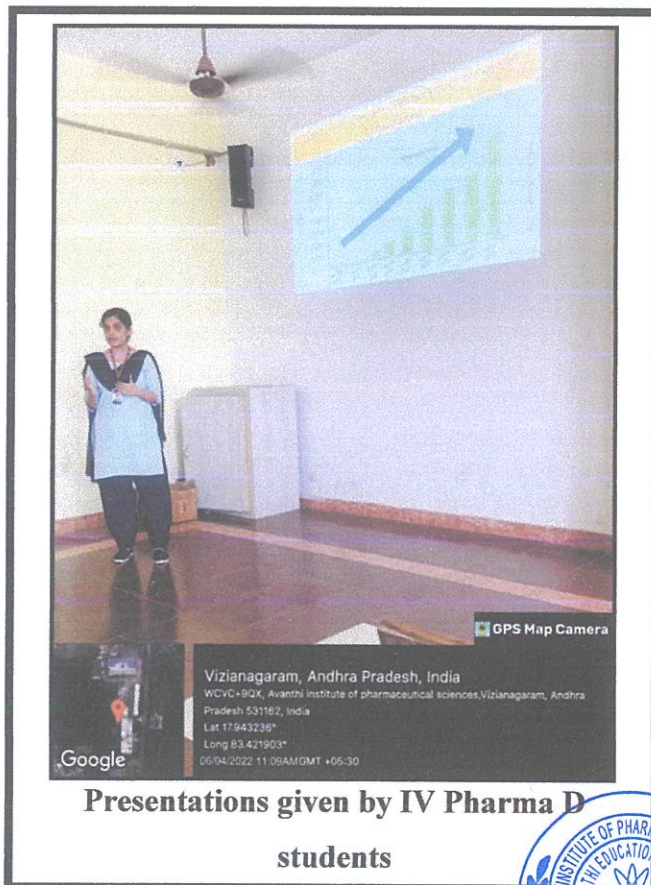
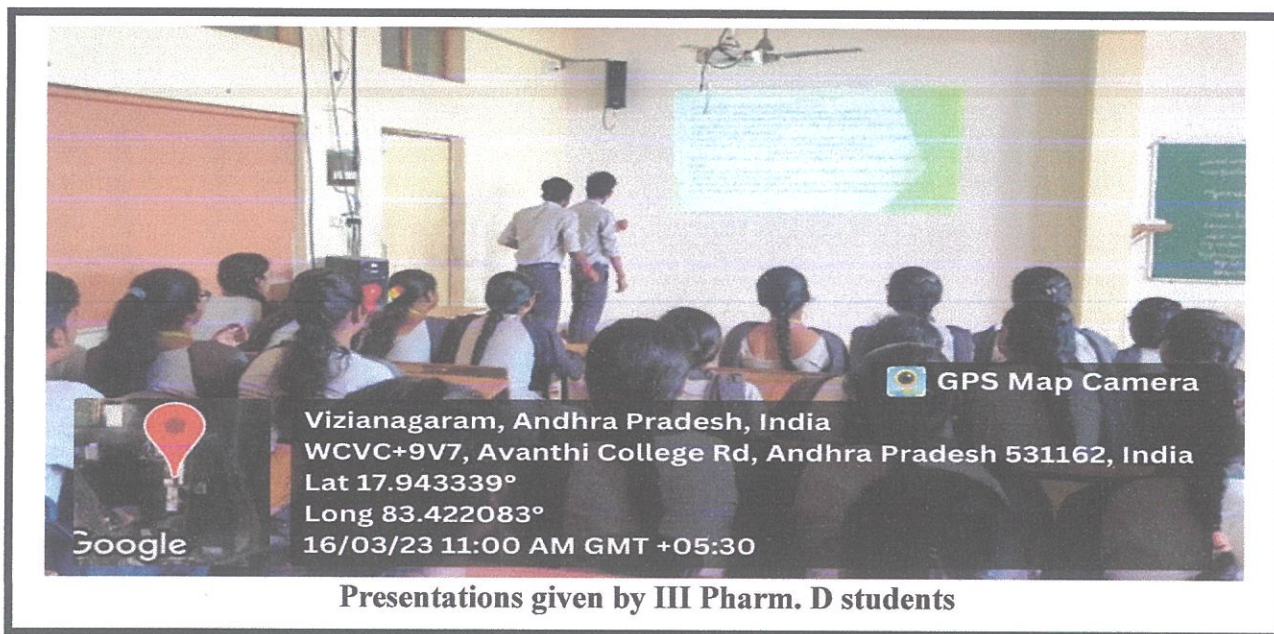
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2.1 Student Seminars:

A group of advanced students studying under a professor with each doing original research and all exchanging results through reports and discussions; a course of study pursued by a seminar; an advanced or graduate course often featuring informality and discussion a scheduled meeting of a seminar or a room for such meetings



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2.2 Hospital posting:

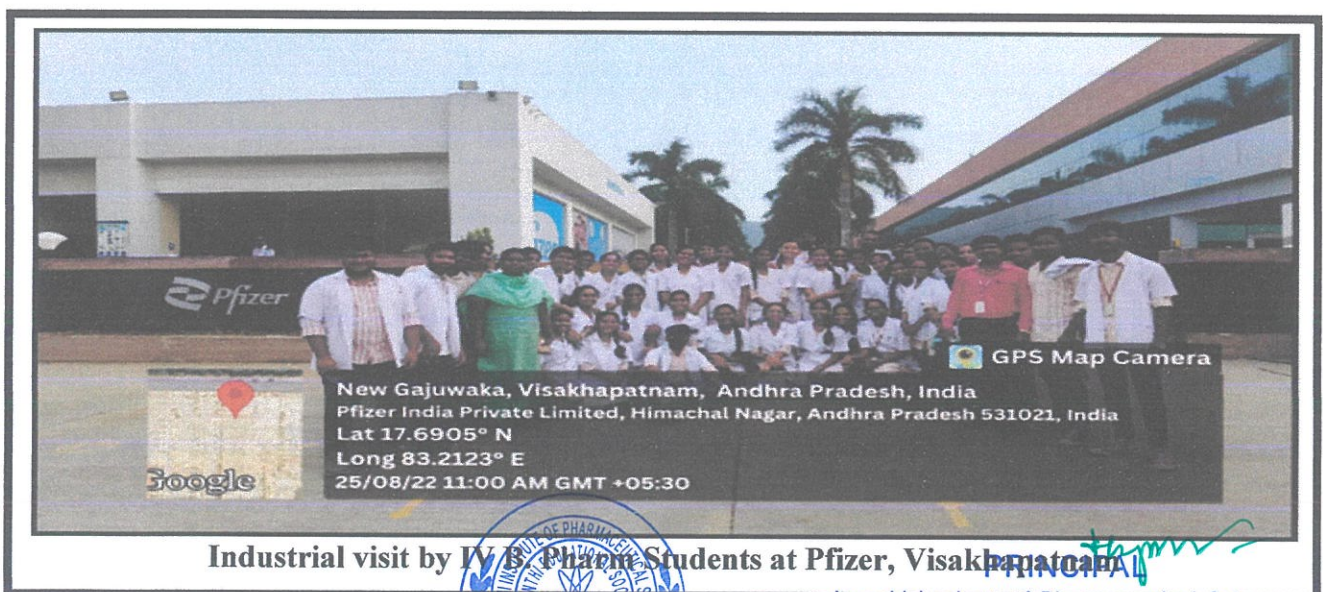
During Hospital posting, every student shall be posted in constituent hospital for a period of not less than fifty hours to be covered in not less than 200 working days in each of second, third- & fourth-year course. Each student shall submit report duly certified by the preceptor and duly attested by the Head of the Department or Institution as prescribed. In the fifth year, every student shall spend half a day in the morning hours attending ward rounds on daily basis as a part of clerkship. Theory teaching scheduled in the afternoon.





2.3 INDUSTRIAL VIST& TRAINING:

Industrial training (Desirable) Every candidate shall be required to work for at least 150 hours spread over four weeks in a Pharmaceutical Industry/Hospital. It includes Production unit, Quality Control department, Quality Assurance department, Analytical laboratory, Chemical manufacturing unit, Pharmaceutical R&D, Hospital (Clinical Pharmacy), Clinical Research Organization, Community Pharmacy, etc. After the Semester – VI and before the commencement of Semester – VII, and shall submit satisfactory report of such work and certificate duly signed by the authority of training organization to the head of the institute.





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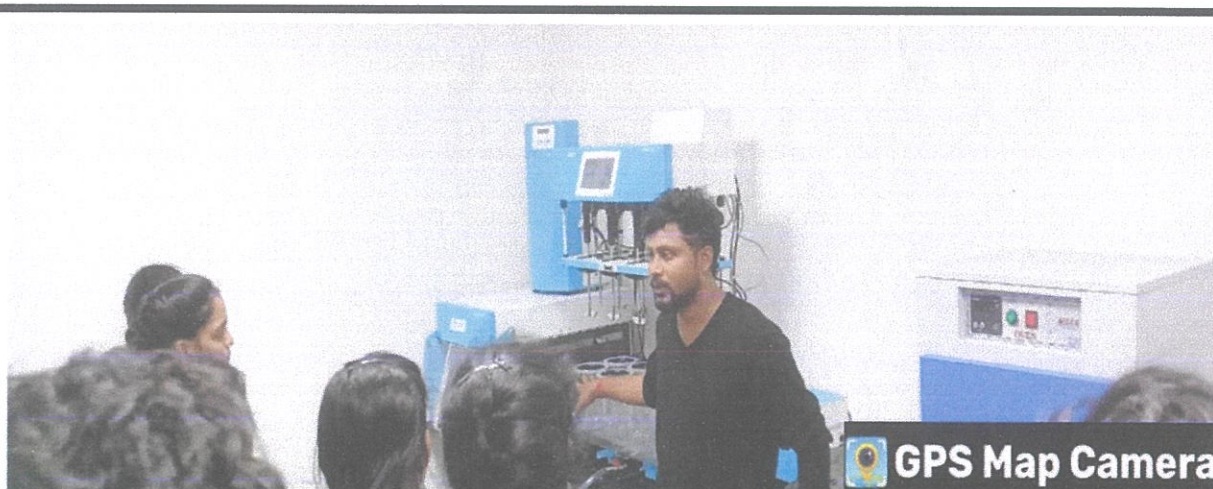
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Long 83.421903°

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Industrial Training by IV B. Pharm Students at Pfizer, Visakhapatnam



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Long 83.421903°

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Industrial Training by IV B. Pharm Students at Aurobindo Visakhapatnam



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All the IV B Pharm students go-through industrial training, some of the names mentioned here.

S. No	Student Name	Roll No.	Training Duration	Industry Name
1	K.Satish Kumar	19T51R0039	01/12/2022- 31/12/2022	Aurobindo
2	L. Chandrika	19T51R0055	01/12/2022- 31/12/2022	Aurobindo
3	M. Sravani	19T51R0058	01/12/2022- 31/12/2022	Aurobindo
4	P. Mrudhula	19T51R0075	01/12/2022- 31/12/2022	Aurobindo
5	P. Kavya	19T51R0076	01/12/2022- 31/12/2022	Aurobindo
6	P.Harsha Veena	19T51R0078	01/12/2022- 31/12/2022	Aurobindo
7	B. Shankar Rao	19T51R0086	01/12/2022- 31/12/2022	Aurobindo
8	V.Sai Sravani	19T51R0097	01/12/2022- 31/12/2022	Aurobindo




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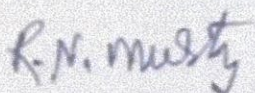
Date: 3rd January 2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. LOTTI CHANDRIKA (Student I.D No: 19T51R0055), studying B. Pharmacy at Avanthi Institute of Pharmaceutical Sciences, Cherukupally Village ,Bhogapuram Mandal ,Vizianagaram District has completed Project Work on "Quality Control " from 1st December 2022 to 31st December 2022 at our unit, situated at survey no: 61-69, IDA, Pydibhimavaram, Ranasthalam Mandal, Srikakulam -District.

Ms. LOTTI CHANDRIKA has shown keen interest during the training period and wishing her a great success.

for AUROBINDO PHARMA LIMITED



R. Narasimha Murthy,

Deputy Manager- Learning & Development.



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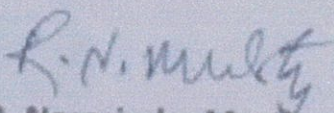
Date: 16th March 2023

TO WHOMSOEVER IT MAY CONCERN

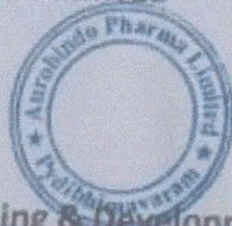
This is to certify that Ms. B.BINDU SRI (Student I.D No: 19T51R0012), studying B. Pharmacy at Avanthi Institute of Pharmaceutical Sciences, Cherukupally Village, Bhogapuram Mandal, Vizianagaram District has completed Project Work on "Quality Control" from 27th February 2023 to 16th March 2023 at our unit, situated at survey no: 61-69, IDA, Pydibhimavaram, Ranasthalam Mandal, Srikakulam -District.


Ms. B.BINDU SRI has shown keen interest during the training period and wishing her a great success.

for AUROBINDO PHARMA LIMITED


R. Narasimha Murthy,

Deputy Manager- Learning & Development.




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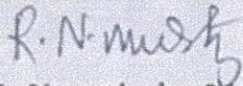
Date: 28th February 2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. MATTA SUSEELA (Student I.D No: 19T51R0061), studying B. Pharmacy at Avanthi Institute of Pharmaceutical Sciences, Cherukupally Village, Bhogapuram Mandal, Vizianagaram District has completed Project Work on "Quality Control" from 1st February 2023 to 28th February 2023 at our unit, situated at survey no: 61-69, IDA, Pydibhimavaram, Ranasthalam Mandal, Srikakulam -District.

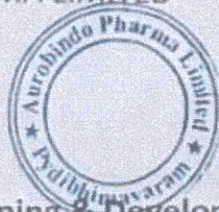
Ms. MATTA SUSEELA has shown keen interest during the training period and wishing her a great success.

for AUROBINDO PHARMA LIMITED



R. Narasimha Murthy,

Deputy Manager- Learning & Development.



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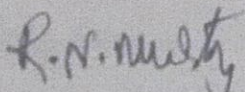
Date: 3rd January 2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. POTHINA KAVYA (Student I.D No: 19T51R0076), studying B. Pharmacy at Avanthi Institute of Pharmaceutical Sciences, Cherukupally Village ,Bhogapuram Mandal ,Vizianagaram District has completed Project Work on "Quality Control " from 1st December 2022 to 31st December 2022 at our unit, situated at survey no: 61-69, IDA, Pydibhimavaram, Ranasthalam Mandal, Srikakulam -District.

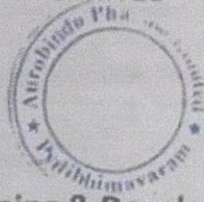
Ms. POTHINA KAVYA has shown keen interest during the training period and wishing her a great success.


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R. Narasimha Murthy,

Deputy Manager- Learning & Development.




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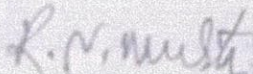
Date: 3rd January 2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. VANKAYALAPATI SAI SRAVANI (Student I.D No: 19T51R0097), studying B. Pharmacy at Avanthi Institute of Pharmaceutical Sciences, Cherukupally Village ,Bhogapuram Mandal ,Vizianagaram District has completed Project Work on "Quality Control " from 1st December 2022 to 31st December 2022 at our unit, situated at survey no: 61-69, IDA, Pydibhimavaram, Ranasthalam Mandal, Srikakulam -District.

Ms. VANKAYALAPATI SAI SRAVANI has shown keen interest during the training period and wishing her a great success.

for AUROBINDO PHARMA LIMITED



R. Narasimha Murthy

Deputy Manager- Learning & Development.




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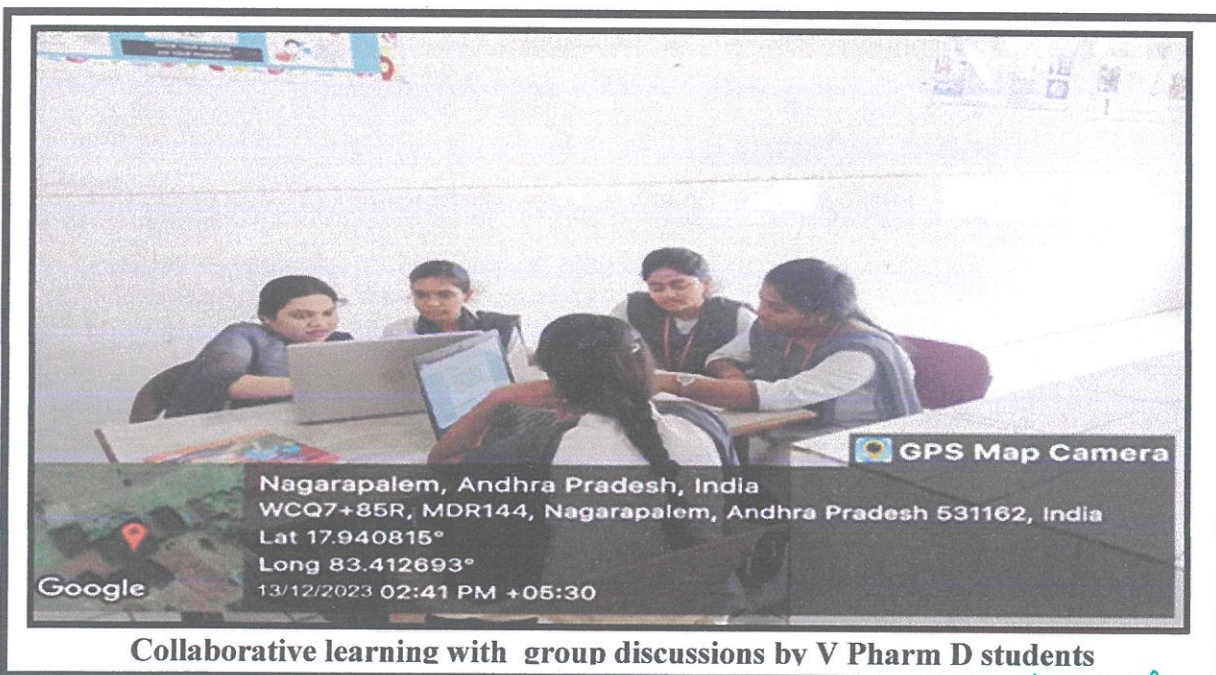
2.4. PEER LEARNING

Avanathi Institute of Pharmacy accepts that friend learning is one of the most outstanding techniques for students to carry out group tasks, group discussions and so forth.

Peer learning helps students to

- Increase concentration
- Develop net works
- Enhance communication
- Encourage learning

Images and details of Peer learning:

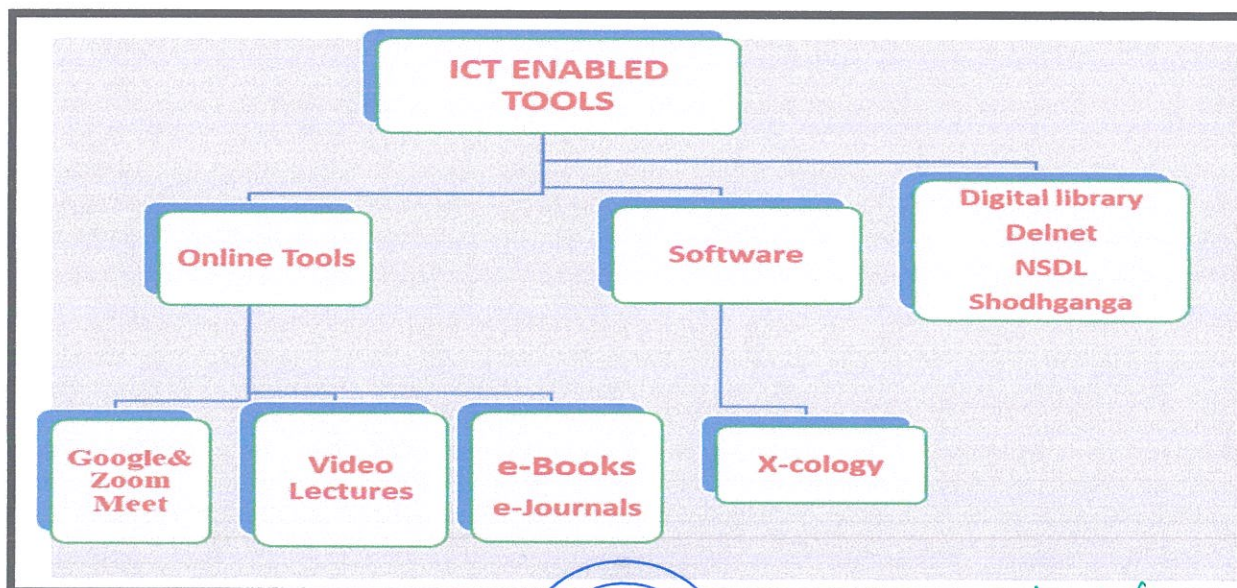




2.5 E- Resources:

List of open source and authorized software support for advanced learning

S No	Name of the Software	Online Accessibility
1	DELNET	389
2	SOUTH ASIAN	12
3	NDLI (National digital library of India)	32
Total		433





E-Books list

Pharmacy Books

S No	Name of the Subject	No of Volumes
1	Anatomy	22
2	Physiology	26
3	Pharmacology	28
4	Immunology	14
5	Internal mercenary	12
6	Diseases	5
7	Nutrition	30
8	Paediatrics'	33
9	Gynaecology	40
10	Surgery	31
11	Ophthalmology	13
12	Preventive medicine	4
13	Psychiatry	48
14	Physician & patient	11
15	Public health	16
16	Military medicine	33
17	Medical genetics	24
18	Medical reference	21
19	Administration and policy	7
20	Audiology & speech pathology	9
21	Emergency medicine	22



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Access E-Journals

S.NO	Name of the journal
1	Actachi mica and pharmaceutical India
2	Acta Pharmaceutica
3	Acta Pharmaceutica
4	Addiction Science and Clinical Practice
5	Adolescent health, Medicine and therapeutics
6	Advanced Techniques in Biology and medicine
7	Advances in medicine
8	Advances in Pharmaco epidemiology and drug safety
9	Advances in Pharmacological and Pharmaceutical Sciences
10	Advances in Pharmacological Sciences
11	Advances in Preventive Medicine
12	African Journal of emergency Medicine
13	African Journal of Pharmacy and
14	Pharmacy and Pharmacology
15	Aids Research and treatment

Flipped Class Room:

A flipped classroom is a **type of blended learning** where students are introduced to content at home and practice working through it at school. This is the reverse of the more common practice of introducing new content at school, then assigning homework and projects to completed by the students independently at home.




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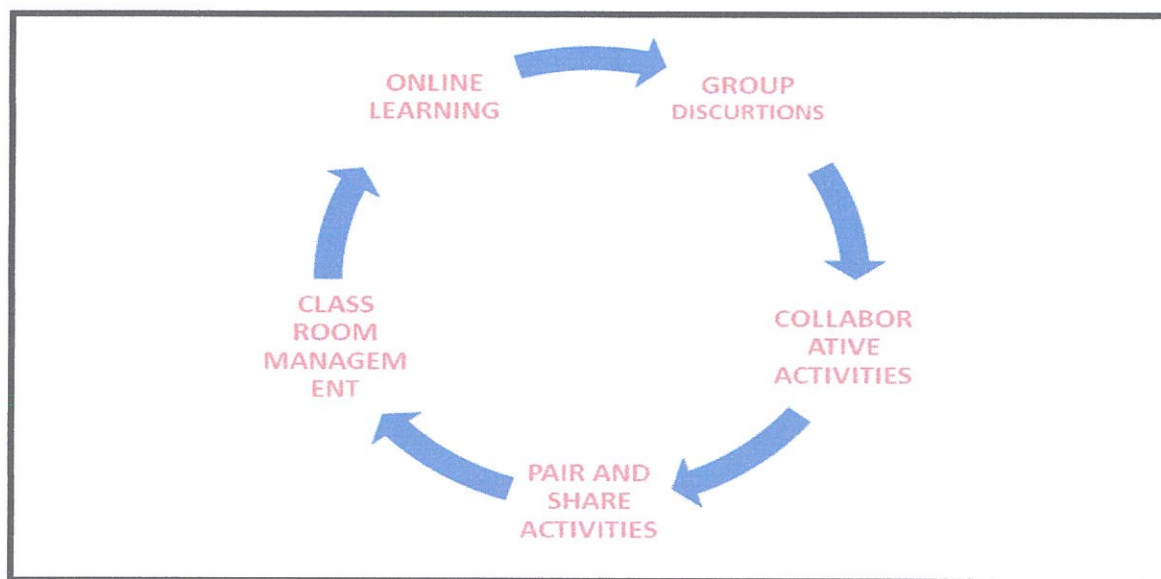


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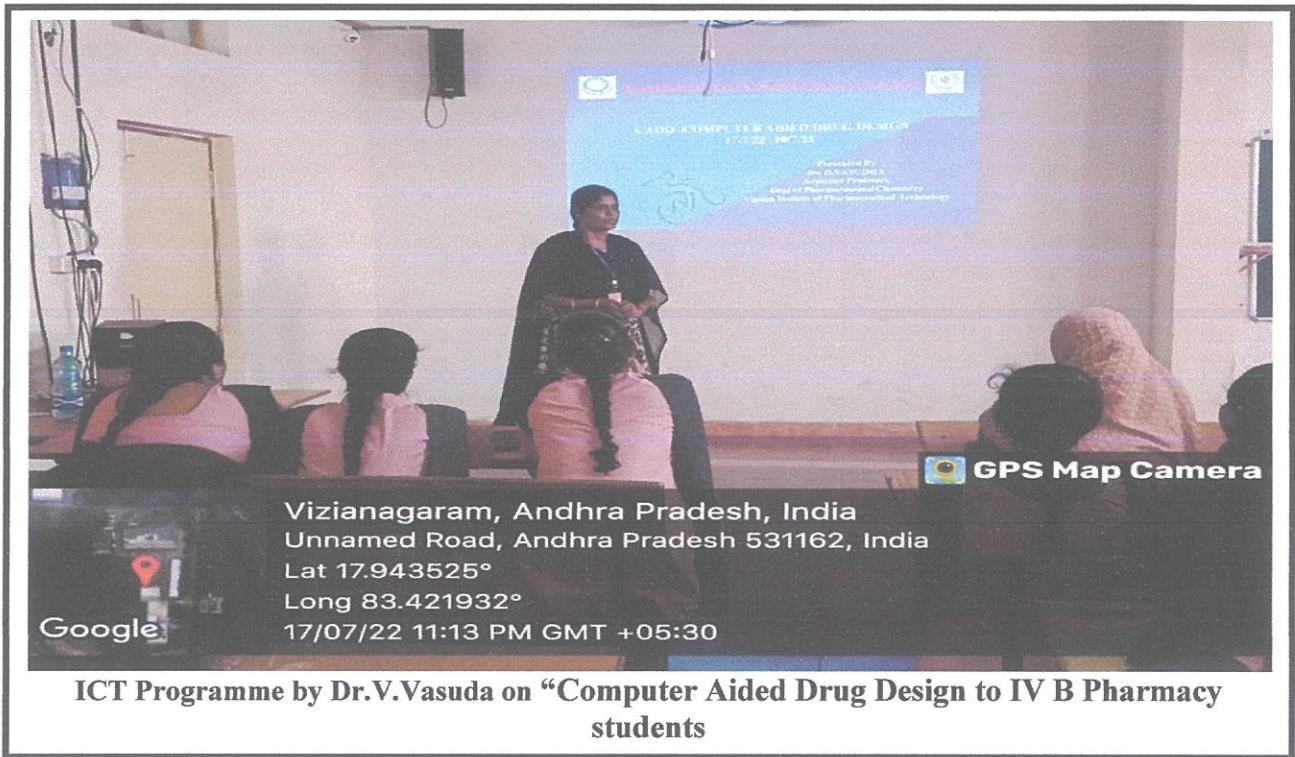
CAPABILITY ENHANCEMENT PROGRAMME

S No	Name of Capability Enhancement Programme	Number OF Students Benefited	DATE
1	Computer Aided Drug Design	144	17 th July 2022 – 18 th July 2022
2	Molecular Docking studies	145	23 rd Feb 2023 – 24 th Feb 2023
3	One day workshop on health application design and development	30	30 th Nov 2022
4	Session on recent trends in medical coding	50	6 th march 2023
5	Utilization of drug information services software for better patient care	30	5 th Dec 2022 – 6 th Dec 2022



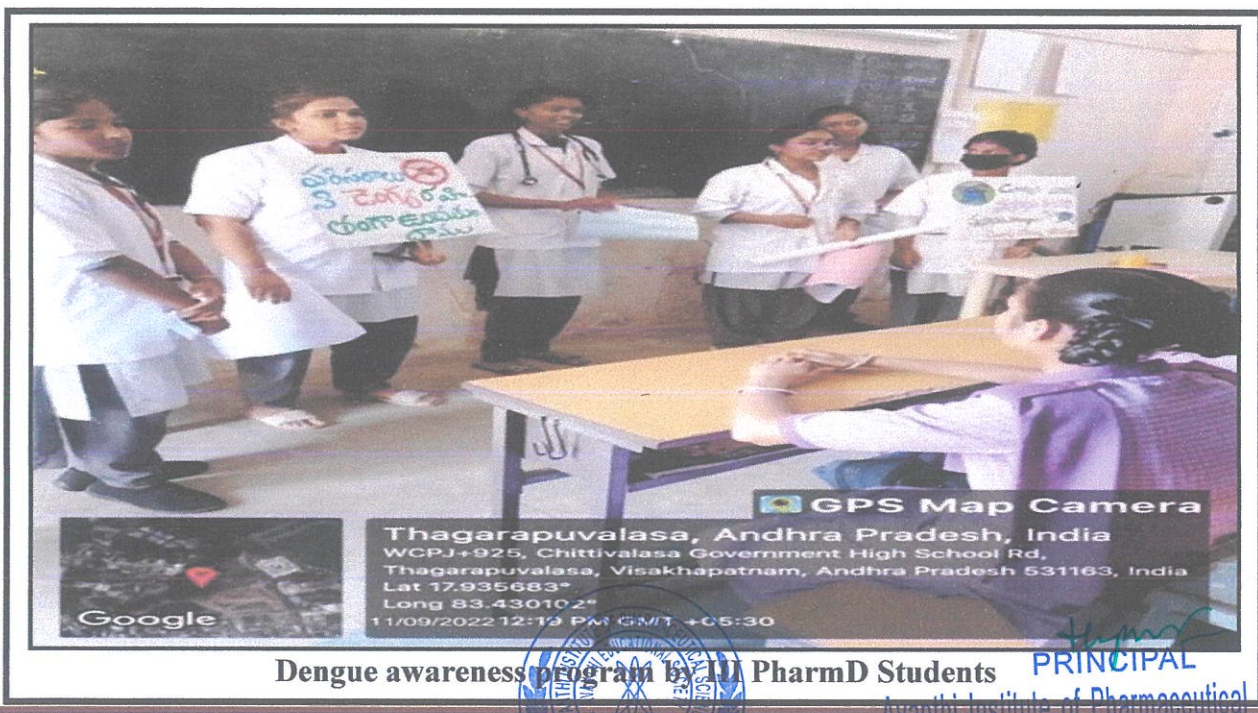
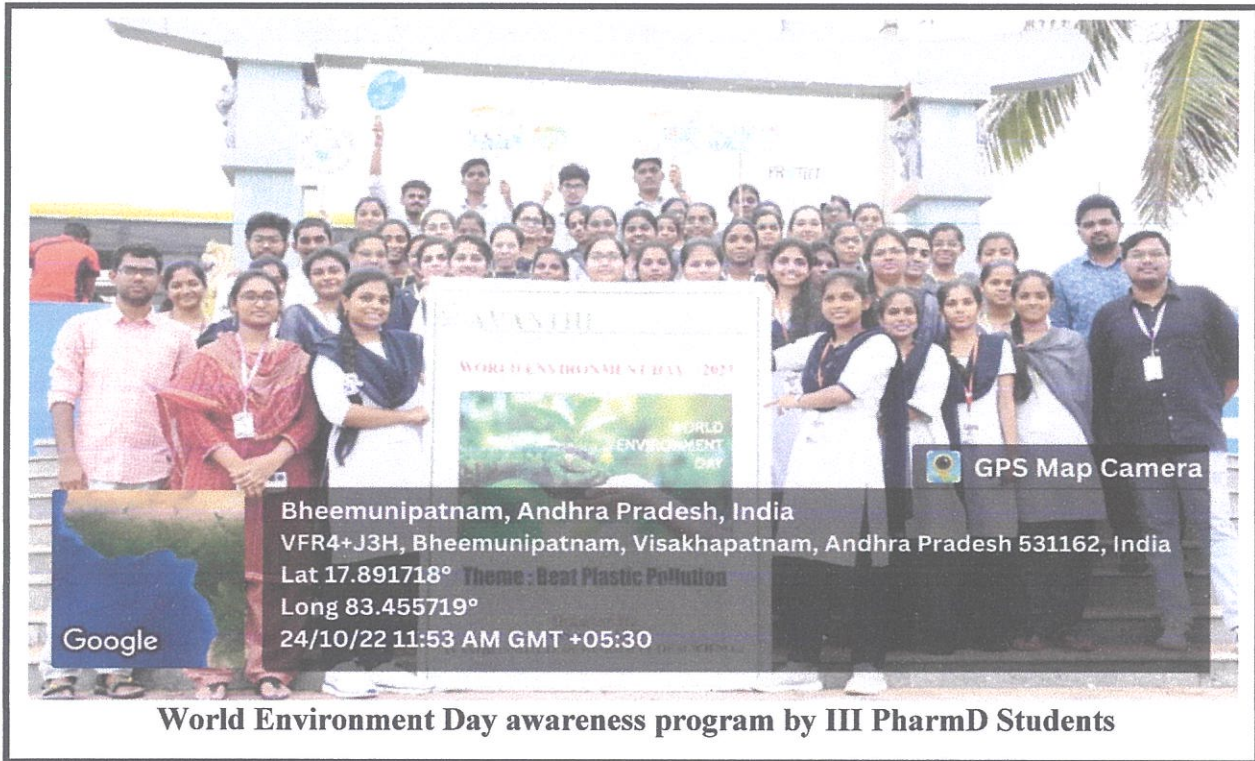
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2.6 Community Services: Community service is of significant importance in pharmacy education as it instills a sense of social responsibility and underscores the pharmacist's role as a healthcare provider deeply connected to the community. Engaging in community service allows pharmacy students to apply their knowledge and skills in practical, real-world settings while addressing the healthcare needs of underserved population.





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3.3 Problem solving method:

Problem-based learning (PBL) is a student-centered approach in which students learn about a subject by working in groups to solve an open-ended problem.

3.1 Assignment

3.2 Project Work

3.3 Case study

3.4 Practice School

3.5 ICT tools utilization by faculty

3.1 Assignment

A task or piece of work allocated to someone as part of a job or course of study. The allocation of someone or something as belonging to a particular group or category. It is a specified task or amount of work assigned or undertaken as if assigned by authority.



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* ORGANIC CHEMISTRY ASSIGNMENT - 1 *

* Elimination Reactions are of 2 types :-

1) E₁ Elimination Reaction

2) E₂ Elimination Reaction

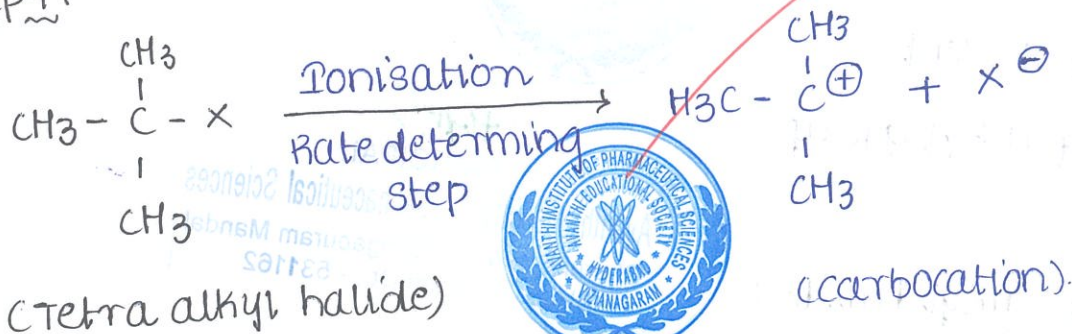
* E₁ Elimination Reaction :-

It is also known as unimolecular Elimination Reaction. Secondary and tertiary alkyl halides undergoes elimination by this method.

→ It is a two step process which involves intermediate formation of carbocation.

→ The first step involves ionisation of alkyl halide to form carbocation. This step is slow step and rate determining (or) limiting step of the reaction.

Step-1 :-

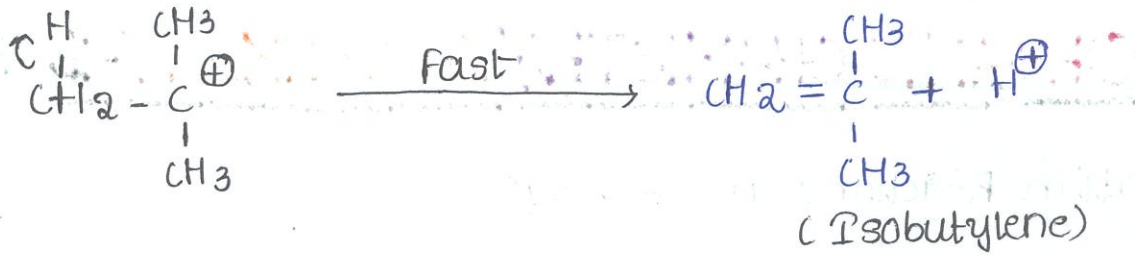


→ second step involves a loss of proton to form alkene. This step is fast step.

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Step-2 :-



→ It follows first order kinetics. So, the rate of reaction depends only upon the concentration of alkyl halide.

Rate \propto [Alkyl halide]

$$R = k [\text{Alkyl halide}]$$

k = Rate constant

* Evidence for E_1 Mechanism :-


→ It follows first order kinetics.

→ It is not accomplished by a primary hydrogen isotope. It involves the formation of carbocation. So, always accomplished by rearrangement.

* Factors effecting E_1 Elimination Reaction :-

1. Nature of alkyl halide
2. Nature of Base
3. Nature of solvent
4. Nature of alkyl group.




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* Nature of alkyl halide :-

Alkyl halides are important substances in eliminated reaction. Alkyl halides must have a good leaving group (halide ion), whether the leaving group, more will be the rate of reaction. The reactivity of alkyl halide follows the sequence for elimination has: $R-I > R-Br > R-Cl > R-F$.

2. Nature of Base :-

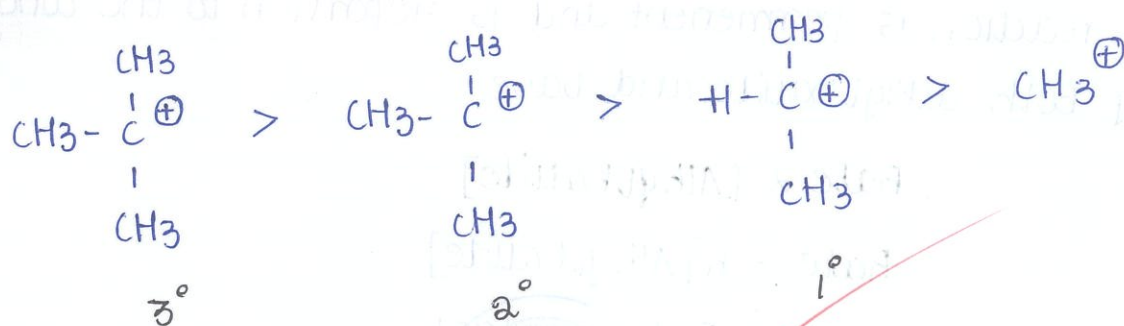
The nature and concentration of base doesn't effect E_1 elimination reaction. As it is doesnot take part in the rate determining step. The rate of E_1 Elimination reaction is independent of nature and concentrated of base.

3. Nature of solvent :-

protic solvents promote (or) enhance rate of reaction. polar protic solvents stabilise the carbocation intermediates.

4. Nature of alkyl group :-

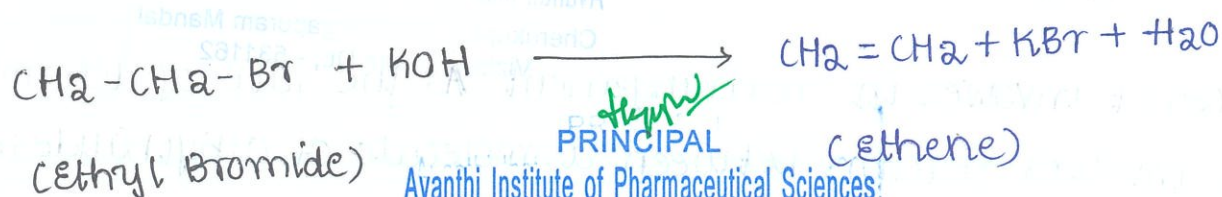
The order of selectivity of alkyl group is $3^\circ > 2^\circ > 1^\circ$.



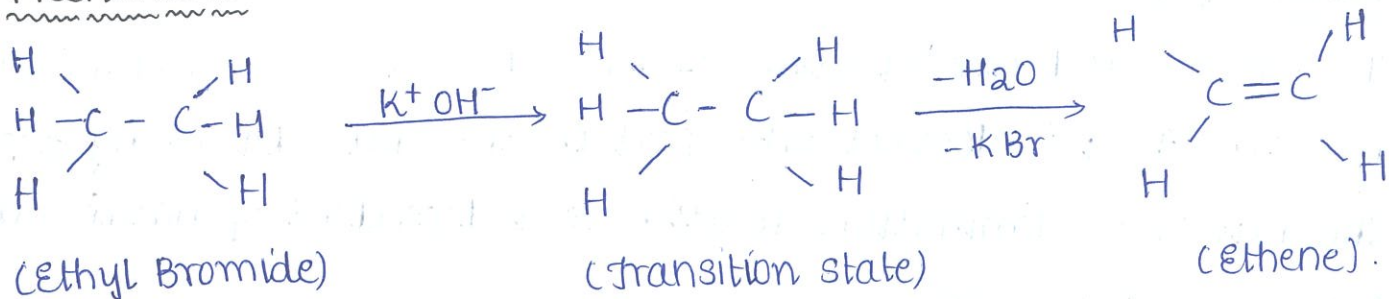
→ There is greater stability of carbocation depends upon the no. of alkyl groups.

2) E_2 Elimination Reaction :-

It is also known as "Bimolecular Elimination Reaction". It is one step process and involves intermediate transition state.



* Mechanism :-



* Base (KOH) pulls on proton away from carbon and simultaneously a halide ion departs and the double bond will be formed.

* Halogen takes its electron pair with it while hydrogen leaves its electron pair behind to form double bond.

* The reaction follows the 2nd order kinetics.

* The rate of reaction is permanent and is proportion to the concentration of both alkyl halide and base.

Rate \propto [Alkyl halide]

Rate = k [Alkyl halide]

k = Rate constant

[] = concentration of Base.

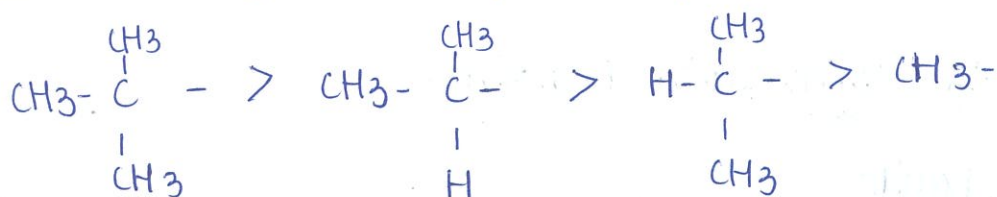
* Evidences for E₂ Elimination Reaction :-

1. It follows the 2nd order kinetics. As the rate determining step involves reaction between alkyl halides and base. Here reaction rate depends on concentration of alkyl halides and concentration of base.

2. It doesn't involve in rearrangement. As the rate of determination involves reaction between a molecule of alkyl halides and a molecule of base and there is no scope for rearrangement.

4. Nature of alkyl group:-

The order of reactivity of alkyl group is



3° alkyl halide

2°

1°

Methyl

* The increase in E₂ reaction rate with increase in alkyl halide substitution can be rationalised in terms of transition state stability.

* In the Transition state the double bond is partially formed thus the T.S for more substituted is lower in energy; reducing the activation energy for the reaction and making the reaction fast.

* Differences between E₁ and E₂:-

E ₁ Elimination	E ₂ Elimination
1. It is unimolecular reaction.	1. It is bimolecular reaction.
2. It involves two steps reaction.	2. It involves single step reaction.
3. Carbocation is formed. It follows the 1 st order kinetics depends upon only alkyl halide concentration.	3. No carbocation is formed. It follows the 2 nd order kinetics depends upon the alkyl halide and base concentration.
4. Polar protic solvents are required in E ₁ reaction.	4. Polar aprotic solvent are required in E ₂ reaction. (3)
5. Rearrangement of carbocation	5. Rearrangement of carbocation doesn't takes place
6. No stereochemistry effect.	6. Stereochemistry effect is present.



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3.2 Project Work:

A project work is a planned and definitely formulated piece of study involving a task or problem taken up by the learner, either individually or in a group, to supplement and apply classroom and laboratory transactions. It follows the approach of Learning by Doing and Learning by Living. Project work All the students shall undertake a project under the supervision of a teacher and submit a report. The area of the project shall directly relate any one of the elective subjects opted by the student in semester VIII. The project shall be carried out in group not exceeding 5 in number. The project report shall be submitted in triplicate (typed & bound copy not less than 25 pages). The internal and external examiner appointed by the University shall evaluate the project at the time of the Practical examinations of other semester(s). Students shall be evaluated in groups for four hours (i.e., about half an hour for a group of five students).

IV B. PHARMACY PROJECT LIST

Admitted batch -2019

Academic Year: 2022-2023

S. No	Batch No	Registered No	Name of the Student	Title of the Project	Name of the Guide
1	Batch 1	19T51R0001	A Jhansi	Simultaneous estimation of rosuvastatin and atorvastatin by using RP-HPLC Method	Mrs. B Aruna
2		19T51R0002	A Jyothirmai		
3		19T51R0003	A Naveen		
4		19T51R0004	B.H Hemanth Kumar		
5		19T51R0005	B Rama Koua		
6	Batch 2	19T51R0006	Bankapalli Sai Rajitha	Design Development and evaluation of self micro emulsified drug delivery system of clarithromycin	Mrs Sravani Boyapati
7		19T51R0007	Behara Durga Sampat Bhavana		
8		19T51R0008	Biddika Prasanth Kumar		
9		19T51R0009	Bodapati Kaveri		
10		19T51R0010	Boddu Mary Mani		
11	Batch 3	19T51R0011	Bogi Pradeep	Phytochemical studies and invitro evaluation of anti ulcer activity of trachyspermumami	Mrs A H V Santhoshi
12		19T51R0012	Bolli Bindu Sri		
13		19T51R0013	Bontalaku Sheshadrimani		



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14		19T51R0014	Bonula Sai Kumar		
15		19T51R0015	Bosi Rajkumar		
16	Batch 4	19T51R0017	Buddala Kasturi	Evaluation of heavy metals in ethonolic extract of crude fibre as indicator of pollution by icopes analysis	Mr Chandaka Madhu
17		19T51R0018	Budumuru Gayathri		
18		19T51R0019	Buradapathi Gopala Krishna		
19		19T51R0020	Chilakala Teja		
20	Batch 5	19T51R0022	Ch Swathimathi	Preparation and evaluation of herbal soap by using Azadiractha indica leaves	Mrs M Krishna Rekha
21		19T51R0023	D S Rithika		
22		19T51R0024	D Kusuma		
23		19T51R0025	D Sarvani		
24		19T51R0026	D Hemalatha		
25	Batch 6	19T51R0027	Dwarapureddi Lavanya	Phytochemical Screening and evaluation of sun protection factor number by methonocic herbal exittract on caric papaya and manilkara japota by using uv spectroscopy	Mr Chandaka Madhu
26		19T51R0028	Jyothi Prodhan		
27		19T51R0029	Gajjala Sreekanth		
28		19T51R0030	Gajjalaadi Narayana		
29		19T51R0031	Gorrela Raju		
30	Batch 7	19T51R0032	Gudivada Gopala Krishna	Assessment of knowledge attitude and practice about hypertension and diabetes mellitus in the rural areas of vizianagaram,AP- A prospective interventional study	Mr Uma Shankar
31		19T51R0033	Gurala Vedhika Sridevi		
32		19T51R0034	Gurana Bhavani		
33		19T51R0035	Gunupuru Nagendra		
34		19T51R0036	Jaganadha Durga Devi		
35	Batch 8	19T51R0037	J Tanuja	Evaluation and antibacterial activity on methanolic extract	Mr Nanaji
36		19T51R0038	K Swapna		



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37		19T51R0039	K Sathish Kumar	of pongamia pinnata	
38		19T51R0040	K Avinash		
39		19T51R0041	K Navya		
40	Batch 9	19T51R0042	K Pavithra	Formulation and evaluation of Econazole Nitrate microspheres by using ionic creation technique	Y Vishnu Vandana
41		19T51R0043	K Manikanta		
42		19T51R0044	K Gowthami Bhavani		
43		19T51R0045	K Keerthi		
44		19T51R0046	K Hari		
45	Batch 10	19T51R0047	K Roja Ramani	Method development and Validation of Sofosbuvir by using UV Spectroscopy	Mrs Chaitanya
46		19T51R0048	K Pavan Kumar		
47		19T51R0049	K Sujatha		
48		19T51R0050	K Santoshi		
49		19T51R0051	K Uma Mahesh		
50	Batch 11	19T51R0052	K Sridevi	Evaluation and antibacterial activity on methanolic extract of cissus of pharmaceutical sciences	Mr Nanaji
51		19T51R0053	L Sai Bhuvaneswari		
52		19T51R0054	L Satyasri Hamsika		
53		19T51R0055	L Chandrika		
54		19T51R0056	M Sirisha		
55	Batch 12	19T51R0057	M Pavithra Pavani	Synthesis characterization and antibacterial evaluation of new series of sulfamethoxazole derivatives	Dr. Sowmya
56		19T51R0058	M Sravani		
57		19T51R0060	M Devayani		
58		19T51R0061	M Suseela		
59		19T51R0062	M Renuka Swathi		



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60	Batch 13	19T51R0063	Mohammed Nafisa	Synthesis and biological activity of novel 2,5 disubstituted benzimidazole derivatives	Dr. Sowmya
61		19T51R0064	Mosalikanti Rishika		
62		19T51R0065	Mulla Maduri		
63		19T51R0066	Mutyala Lohith		
64		19T51R0067	Mayalapalli Devi		
65	Batch 14	19T51R0068	N Tanuja	Anxiety and Depression in young individuals	Mr Uma Shankar
66		19T51R0069	N Padma		
67		19T51R0070	N Sadhana		
68		19T51R0071	P Sharon		
69		19T51R0072	P Swathi		
70	Batch 15	19T51R0074	P Sai Jahnvi	Method Development and validation of duloxetine hydrochloride by using UV visible spectroscopy	Mrs. Chaitanya
71		19T51R0075	P Mrudhula		
72		19T51R0076	P Kavya		
73		19T51R0077	P Srilekha		
74		19T51R0078	P Harsha Venna		
75	Batch 16	19T51R0079	R. Dillip Kumar	Evaluation of multipurpose powder by extracted the tamarind seed polysaccharides	S Chandra Sekhar
		19T51R0080	R. Ramadevi		
		19T51R0081	R. Bhargavi		
		19T51R0082	R. Bhavanthi		
		19T51R0083	S. Sesanka		
76	Batch 17	19T51R0084	S Harinadh	Preparation and evaluation of sustained release matrix tablets of ofloxacin by using natural gums	Dr M B V Raju
77		19T51R0085	S Vamsi Yadav		
78		19T51R0086	Shankar Rao Bora		

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79		19T51R0087	N Shivani		
80		19T51R0088	S Akhila Kumar		
81	Batch 18	19T51R0089	S Sandili	Phytochemical studies and in vitro evaluation of anti-helminthic activity of aerial parts of leaves aspera	Mrs. A H V Santhoshi
82		19T51R0090	S Anjusree		
83		19T51R0091	T Abhishek		
84		19T51R0092	T Poojitha		
85		19T51R0093	T Haritha		
86	Batch 19	19T51R0094	T Veena Pani	Formulation and evaluation of Herbal Lipstick	Mrs. B Bhagya Sri
87		19T51R0095	T Aravindh		
88		19T51R0096	T Manisha		
90		19T51R0097	V Sai Sravani		
91		19T51R0098	V. Lavanya		
92	Batch 20	19T51R0099	Yammala Vamsi	Formulation and evaluation of anti-microbial activity of herbal ointment	Mrs. Madhavi Kumari
93		19T51R00A1	Pasupureddy Swarna Latha		
94		19T51R00A2	Koyya Roshini		
95		19T51R00A3	Gnana Prasanna		
96		18T51R0072	Surata Sai Saranya		




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V Pharm. D-Project List

Admitted batch -2018

Academic Year- 2022-23

S. No.	Batch Number	Roll Number	Name of the Student	Project Title	Name of the Guide
1	Batch 1	18T51T0003	B.Jaya Surya	Identification of perinatal complications that lead to postpartum depression in pregnant women and assessment of role of clinical pharmacist in its prevention	V. Uma Sankar
2		18T51T0004	B.Kirthana		
3		18T51T0005	B.Jaya Radha Madavi		
4		18T51T0026	Y.Naveen Babu		
5	Batch 2	18T51T0006	B.Meghna	Comparision of efficacy and safety in platelet rich plasma therapy versus corticosteriod injection in orthopaedic patients attending in tertiary care teaching hospital .A prospective observational study	Dr. B. Manoj Kumar
6		18T51T0020	P.Manamoodha		
7		18T51T0021	R.P.V.S.S.Prasant H		
8		21T51T0101	V.Srinivasa Rao		
9	Batch 3	18T51T0007	B.Pravillika	Identification of risk factor for various cardiac complications in patients visiting tertiary cure teaching hospital .A prospective interventional case control study	V. Uma Sankar
10		18T51T0008	D.Anusha		
11		18T51T0016	M.Sireesha		
12		18T51T0017	N.Hima Bindu		
13	Batch 4	18T51T0018	O.Deepthi	Role of clinical pharmacits in the assesment of severityof depression and its management in cancer patients and a report on treatment procedures .A prospective interventional analytical study	Dr. B. Tejasree
14		18T51T0019	P.Vikas		
15		18T51T0024	U.Meghana		
16		16T51T0025	V. Lehari Jacob		
17	Batch 5	18T51T0009	G. Eswari	A prospective observational study on polycystic ovarian syndrome and its impact on quality of life of women in correlation age, bmi and variuos factors	Dr. Tarra Rushi
18		18T51T0012	L. Krishna Priya		
19		18T51T0013	L. Satish Kumar		
20		18T51T0015	M. Jnaapika		
21	Batch 6	18T51T0002	B. Tushara	Evaluation of prevelance of pregnancy induced endocrine disorderss and associated complications by clinical pharmacist in a tertiary care teaching hospital- a prospective observational study	Dr. Randeep Raj Christina
22		18T51T0023	G. Simhavalli		
23		18T51T0025	V. Swathi Priya		
24		21T51T0102	T. Jagadish Chandra Prasad		




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3.3 CASE STUDY BY PHARM D STUDENTS

Pharmacy Case Studies helps students understand the application of therapeutics in clinical practice. It tests knowledge gained within the individual areas of law and ethics, pharmaceuticals, pharmacology and pathology by examples, bringing together various areas taught on the degree course. Case studies of increasing complexity in strands of learning from across the pharmacy curriculum. Scenarios include both community and hospital pharmacy situations, as suited to the disease and pharmaceutical care provision. Each chapter contains five case studies with questions and answers increasing in complexity from those for first year students through to cases designed for fourth year/pre-registration level.




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DOCTOR OF PHARMACY
PATIENT PROFILE FORM

Name: Ms. N I.P. No: 32151 Age: 22 Gender: F Department: gynaecology

Unit: I D.O.A: D.O.D: Address: 1-2-111

A) SUBJECTIVE EVIDENCE:

- Chief complaint: The patient was admitted with c/o heavy menstrual bleeding associated with pain since 1 week
- History of present illness: abdominal pain associated with heavy bleeding
- Past medical history: K/c/o nephrotic syndrome: .3 yrs
- Past medication history: Mycophenolate Mofetil → 750mg BD
- Family history: NA
- Social history:
Smoker: No Alcoholic: No Occupation: student

B) OBJECTIVE EVIDENCE:

Vitals	Day1	Day2	Day3	Day4	Day5	Day6	Day7
Blood pressure	130/90	130/90	120/80	120/80			
Respiratory rate Heart	83	86	80	82			
Temperature							



Hyma
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PHYSICAL EXAMINATION:

Respiratory System	B/LAE ⊕					
Cardio Vascular System						
Central Nervous System						
Abdomen	P/A soft.					

C) LAB INVESTIGATIONS:

Hb → 9.3

RBC → 5.5

ESR → 30 mm/hr

HDL → 55

Total cholesterol → 200

lymphocytes → 40

D) DIAGNOSIS:

Menorrhagia

E) ASSESSMENT:

1) Aetiology:

a) Cause of the problem:

b) Does the patient have any risk factors: **Yes, Nephrotic Syndrome**

c) Is this a drug-induced disease: **NO**

2) Need for therapy:

Nature of the problem: Mild / Moderate / Severe / Acute / Chronic: **✓**

3) Current therapy:

Drug name	Dose	Dosage form & R.O.A	Frequency	Duration Of the Treatment						
				1	2	3	4	5	6	7
Lornoxicam		IM	BD	✓	✓	✓	✓	✓	✓	
Mycofit	500mg	PO	TID	✓	✓	✓	✓	✓	✓	
Atorvastatin	40mg	PO	OD	✓	✓	✓	✓	✓	✓	
wysolone	10mg	PO	OD	✓	✓	✓	✓	✓	✓	
IFA	1tab	PO	OD	✓	✓	✓	✓	✓	✓	
Tragic		IM	BD	✓	✓	✓	✓	✓	✓	

a) The necessity of current drugs (justify):

All these drugs are prescribed to reduce patient's clinical symptoms and to treat the disease condition "Menorrhagia"

b) Patients response to treatment:

good

c) Any adverse effects:

d) Is patient adherent to the treatment: **yes**

e) Correctness of Dose / Dosage form / R.O.A of drug regimen:



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F) PLAN:

- Goals for the problem:

1. To Reduce heavy menstrual bleeding
2. To treat pain

- Recommend treatment: continue treatment/discontinue treatment:
(If discontinued specify the reason)

continue Treatment

Suggest alternate therapy (if current therapy is not working or results in adverse effect)

Not Suggested.

Patient Education:

1) About disease: Menorrhagia also called as heavy periods is a condition where a woman loses excessive amount of blood during consecutive periods. It is defined as total blood loss exceeding 80 ml/period usually lasting longer than 7 days.

2) Use of the drugs:

1. Ibuprofen works by blocking production of certain substances that send pain signals to brain
2. Tragic works by preventing certain enzymes that break a blood clot formed in the body.
3. Atorvastatin is used for reduction of elevated cholesterol

Administration Guidelines:

Atorvastatin must be administered after meals and only during bed time.

Dietary changes:

1. Increase intake of iron containing foods like dry fruits, Spinach, beans, eggs.
2. Also increase intake of milk and foods rich in magnesium.

Lifestyle modifications:

1. Take warm water bath to relieve pain and discomfort
2. Moderate regular exercise can ease heavy bleeding and cramps.

Precautions:


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DRUG INTERACTION DOCUMENTATION FORM

Name of the Patient: Ms.N

Age: 22

Sex: F

I.P No: 32151

Social History:

Diagnosis: Menorrhagia

Pregnancy/Lactation: Nil

Details of Drug Therapy

1. Lornoxicam

2. Toropic

3. Mycofit → 500mg

4. Atorvastatin → 40mg

5. wysolone → 10mg.

Type of Interaction	Severity & Documentation	Summary of Interaction	Clinical Management
Drug-Drug prednisolone + Lornoxicam	moderate	combined use may increase GI toxicity	During Concomittant therapy patients are advised to take drugs with food.
Drug-Food			
Drug-Tobacco, Ethanol			
Drug- Pregnancy/Lactation			

Was the Drug Interaction was discussed with concerned physician:



Yes



No

Any appropriate Suggestion given:



Yes



No

Name of the Student: G. sai padmini

Date:

Reference Consulted: Drugs.com

Staff In-charge:

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DOCTOR OF PHARMACY

PHARMACIST INTERVENTION DOCUMENTATION FORM

1. Patient Details:

Name: Ms. N Age: 22 Sex: M/F F I.P/O.P No: 32151

Ward: gynaecology D.I. No: Date of admission:

Reason for admission: heavy menstrual bleeding & pain

On examination:

Diagnosis: Menorrhagia

2. Prescription Details:

S.No	Drug	Dose & Frequency
1.	mycofit	500mg TID
2.	Atorvastatin	40mg OD
3.	wysolone	10mg OD

Laboratory Data:

Hb → 9.3
RBC → 5.5
ESR → 30
HDL → 55
Total cholesterol → 200

3. Prescription Problem (Check all that apply):

- Allergy Interaction Incomplete Rx High Dose
 Prior ADR Unnecessary Drug Duplication Low Dose
 Contraindication Wrong Drug Excessive Duration Inconvenient
 Others (please specify)

Drugs Involved Strength Direction Quantity Cost (Rs.)

mycofit 500mg TID
Atorvastatin 40mg OD
wysolone 10mg OD

4. Action Taken (Check all that apply):

- Discussion with Patient Discussion with Prescriber
 Discussion with Patient Representative Drug Information Reference Consulted
 Others (please specify):



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5. Recommendations (Check all that apply):

- Change:** Drug Dose Duration Form/Route Schedule
- Dose:** Increase Decrease
- Drug:** Stop/Hold Add
- Other:** Laboratory Data

Brief:

6. Intervention Accepted:

- Yes No

7. Results (Check all that apply):

- Rx:** Dispensed as Written Clarified & Dispensed
 Not Dispensed Changed & Dispensed
- Patient:** Counselling Written Information given to Patient
- Others:** Improved Compliance Increased Therapeutic Effectiveness
 Improved Monitoring of Therapy Prevent Toxicity/ Side Effects
 Reduced Cost by Rs.

8. Follow up Details of the Patient:

The patient was advised for follow up during relapse of events

9. Intervention Made By:

Name: G. Sai padmini

Designation: Intern Signature with Date:





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DOCTOR OF PHARMACY

PATIENT COUNSELLING DOCUMENTATION FORM

Date:

Time:

Department: *gynaecology*

Unit: *I*

DoA:

DoD:

Patient details:

Age: *22yrs*

Weight:

Sex: M/F *F*

Allergies: *Not Reported*

Current Medical Problems: *Heavy menstrual bleeding & pain*

Current medication:

1. *Mycofit* → 500mg

3. *Atova* → 40mg

2. *Jorpic* → BD

4. *wysolone* → 10mg

Disease Counselling: *Menorrhagia*

Time taken for counselling:

Less than 10 min.

10 to 20 min.

More than 20 min.

Counselling Provided to:

Patient

Patient's Representative

Whether counselling was conducted at an appropriate place? Yes [] No []

If patient's representative, give reason:

Patient is unconscious

Language Problem

Hearing Problem

Paediatric Patient

Others (Please Specify)



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Counselling Aids used:

Pictograms Dummy Inhaler Device Spacer

Others (Please Specify)

Counselling Material/Aid provided:

Pamphlets Product Information leaflet

Others (Please Specify)

Points covered during the counselling session:

Name & Purpose of medication <input checked="" type="checkbox"/>	Dosage regimen
Advice on missed dose <input checked="" type="checkbox"/>	Potential Side-effects
Precautions to be taken	Strong recommendations
Benefits of completing the course	Life style modifications

Significant Interactions (Drug-Drug, Food-Drug, Drug-Disease):

Prednisolone + Lornoxicam → Serious GI toxicity

Any major barriers involved: Yes [] No []

If Yes, Patient based
 Provider based
 System based

Quote specific barrier (If any):

If Yes, whether barrier was overcome? Yes [] No []

Understanding of the patient ascertained: Yes [] No []

Name of Counselling Pharmacist: *G. Sai padmini*

Signature: *[Signature]*

Staff In-charge:

Signature: *[Signature]*



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DOCTOR OF PHARMACY

DRUG INFORMATION DOCUMENTATION FORM

Date:

Time:

Received by:

Department: *gynaecology*

Unit:

Phone No.:

Enquirer's Professional status:

Physician

P.G.

Intern

Others

Patient details:

Age: *22*

Weight:

Sex: M/F *F*

Liver/Renal Function:

Allergies: *Not Reported.*

Hb → 9.3

ESR → 30 mm/hr

Lymphocytes → 40.

Current Medical Problems:

c/o heavy menstrual bleeding associated w pain since 1 week. K/c/o nephrotic syndrome ∴ 3yrs.

Relevant Drug Therapy:

1. Lornoxicam

3. Atorvastatin → 40mg

2. Mycofit → 500mg

4. wysolone → 10mg.

Specific background information collected?

Yes

No

Details of Enquiry:

Mode of Request: Direct Access

During Ward-rounds

Telephone

Others



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Purpose of Enquiry: Update Knowledge

Better Patient Care ✓

Others ✓

Question Category: Indication

Availability/Cost

Efficacy

Interaction ✓

Pharmacokinetics

Poisoning

Drug Therapy

Dosage/Administration ✓

ADR

Others

Answer Needed: Immediately ✓

Within 2-4 hours ✓

Within a day

Within 1-2 days

Date of Reply:

Reasons for delayed answer (if any):

Follow up (if any):

Form of reply:

Verbal ✓

Written

Both

Printed Material

Information Provided:

Reference (s) Consulted:

Name of Pharmacist: G. Sai padmini

Signature: 

Staff In-charge:

Signature:






3.4 PRACTICE SCHOOL FOR B-PHARM

Practice School is an innovative concept in undergraduate engineering education, which creates a bridge between conventional classroom learning and gaining valuable real-life experience in an industry or research organization.

In the VII semester, every candidate shall undergo practice school for a period of 150 hours evenly distributed throughout the semester. The student shall opt any one of the domains for practice school declared by the program committee from time to time. At the end of the practice school, every student shall submit a printed report (in triplicate) on the practice school he/she attended (not more than 25 pages). Along with the exams of semester VII, the report submitted by the student, knowledge and skills acquired by the student through practice school shall be evaluated by the subject experts at college level and grade point shall be awarded.




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POLARIMETER



Practice school submitted to
JNTUGV, VIZIANAGARAM, A.P

In Partial Fulfillment for the Award of Degree of
BACHELOR OF PHARMACY

Submitted by

K.Sujatha (BT5R0049)

Under the guidance of

Mr. A.Nanaji (MPharm)

Associate Professor



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CHERUKUPALLY, VIZIANAGARAM DISTRICT-531162, A.P.
(2022-2023)

Aname



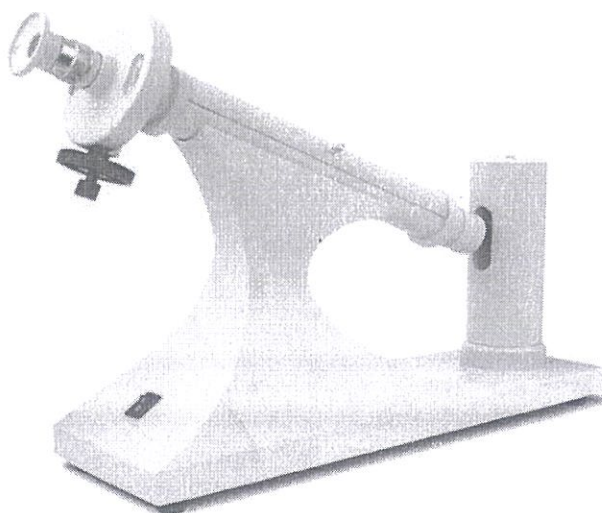
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POLARIMETER:

A polarimeter is an instrument which measures the angle of rotation by passing polarized light through an optically active (chiral) substance. To measure optical rotation, a Light Emitting Diode (LED) produces a beam of ordinary light.

Some chemical substances are optically active, and linearly polarized (unidirectional) light will rotate either to the left (counter-clockwise) or right (clockwise) when passed through these substances.



HISTORY:

Polarization by reflection was discovered in 1808 by Étienne-Louis Malus (1775–1812).

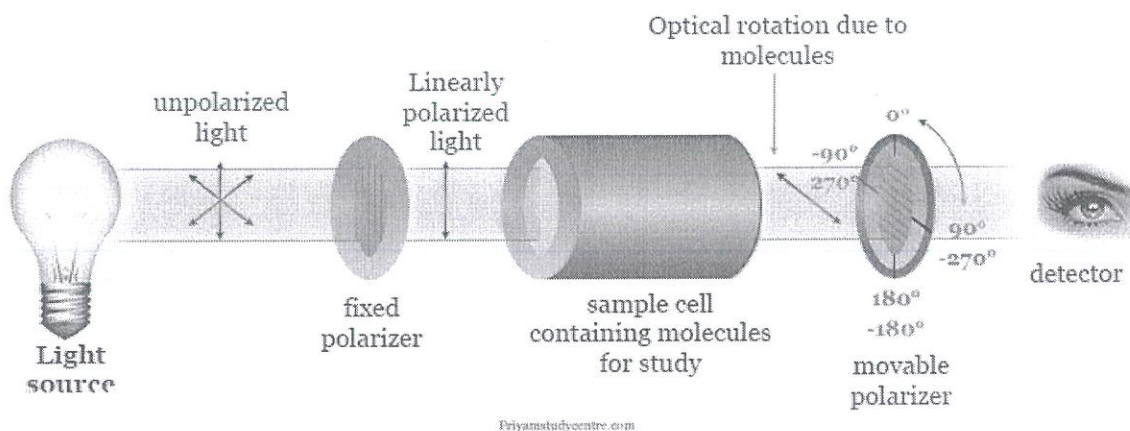
PRINCIPLE:

The basic operation principle of a polarimeter comprises the following: One generates light with an accurately prepared linear polarization state, usually by

passage through a polarizer. That light is sent through the optically active sample, which somewhat rotates the polarization direction.

Construction:

Instrumentation of polarimetry



The polarimeter is made up of two Nicol prisms (the polarizer and analyzer). The polarizer is fixed and the analyzer can be rotated. The prisms may be thought of as slits S1 and S2. The light waves may be considered to correspond to waves in the string. The polarizer S1 allows only those light waves which move in a single plane. This causes the light to become plane polarized. When the analyzer is also placed in a similar position it allows the light waves coming from the polarizer to pass through it. When it is rotated through the right angle no waves can pass through the right angle and the field appears to be dark. If now a glass tube containing an optically active solution is placed between the polarizer and analyzer the light now rotates through the plane of polarization through a certain angle, the analyzer will have to be rotated in same angle.

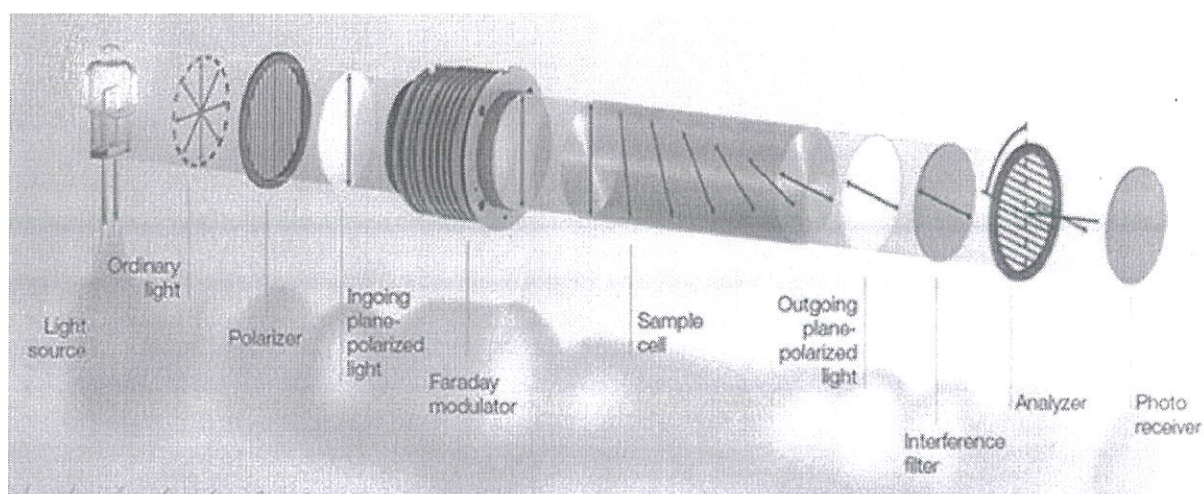


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Operation:

Polarimeters measure this by passing monochromatic light through the first of two polarising plates, creating a polarized beam. This first plate is known as the polarizer. This beam is then rotated as it passes through the sample. After passing through the sample, a second polarizer, known as the analyzer, rotates either via manual rotation or automatic detection of the angle. When the analyzer is rotated such that all the light or no light can pass through, then one can find the angle of rotation which is equal to the angle θ by which the analyser was rotated in the former case, or $90-\theta$ in the latter case.

The unit is expressed as, "°Z."




Types of polarimeter:

Laurent's half-shade polarimeter:

When plane-polarised light passes through some crystals, the velocity of left-polarized light is different from that of the right-polarized light, thus the crystals are said to have two refractive indices, i.e. double refracting.




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Construction:


Half shade device which divides the field of polarized light emerging out of the Nicol P into two halves, generally of unequal brightness. It is a glass tube in which an optically active solution is filled. The light, after passing through T, is allowed to fall on the analyzing Nicol A which can be rotated about the axis of the tube.

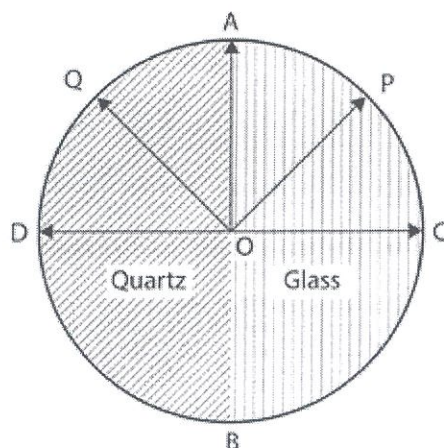
Working principle:

The position of the analyzer is adjusted so that the field of view is dark when the tube is empty. Now the tube is filled with the optically active solution and it is set in its proper position. The optically active solution rotates the plane of polarization of the light emerging out of the polarizer P by some angle, so the light is transmitted by analyzer A and the field of view of the telescope becomes bright. Now the analyzer is rotated by a finite angle so that the field of view of the telescope again becomes dark. This will happen only when the analyzer is rotated by the same angle by which the plane of polarization of light is rotated by the optically active solution.

The position of the analyzer is again noted. The difference of the two readings will give the angle of rotation of the plane of polarization.T.




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Half shade device: It consists of two semicircular plates ACB and ADB. One half ACB is made of glass while the other half is made of quartz. Both halves are cemented together. The quartz is cut parallel to the optic axis. The thickness of the quartz is selected in such a way that it introduces a path difference of $\lambda/2$ between ordinary and extraordinary rays. The thickness of the glass is selected in such a way that it absorbs the same amount of light as is absorbed by the quartz half.

Consider that the vibration of polarization is along OP. On passing through the glass half the vibrations remain along OP. But on passing through the quartz half these vibrations will split into O- and E-components. The E-components are parallel to the optic axis while the O-component is perpendicular to the optic axis. The O-component travels faster in quartz and hence an emergent O-component will be along OD instead of along OC. Thus components OA and OD will combine to form a resultant vibration along OQ which makes the same angle with the optic axis as OP.

Biquartz polarimeter:

In biquartz polarimeters, a biquartz plate is used. A biquartz plate consists of two semi-circular plates of quartz each of thickness 3.75mm. One half consists of




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right-handed optically active quartz, while the other is left-handed optically active quartz.

Semi-automatic:

Today, semi-automatic polarimeters are available. The operator views the image via a digital display adjusts the analyzer angle with electronic controls.

Fully automatic:



Modern automatic polarimeter with touchscreen and camera image of filled sample cell. Fast automatic digital polarimeters yield an accurate result within a few seconds, regardless of the rotation angle of the sample. In addition, they provide continuous measurement, facilitating High-performance liquid chromatography and other kinetic investigations.

Another feature of modern polarimeters is the Faraday modulator. The Faraday modulator creates an alternating current magnetic field. It oscillates the plane of polarization to enhance the detection accuracy by allowing the point of maximal darkness to be passed through again and again and thus be determined with even more accuracy.

The angle of rotation of an optically active substance can be affected by:

- Concentration of the sample



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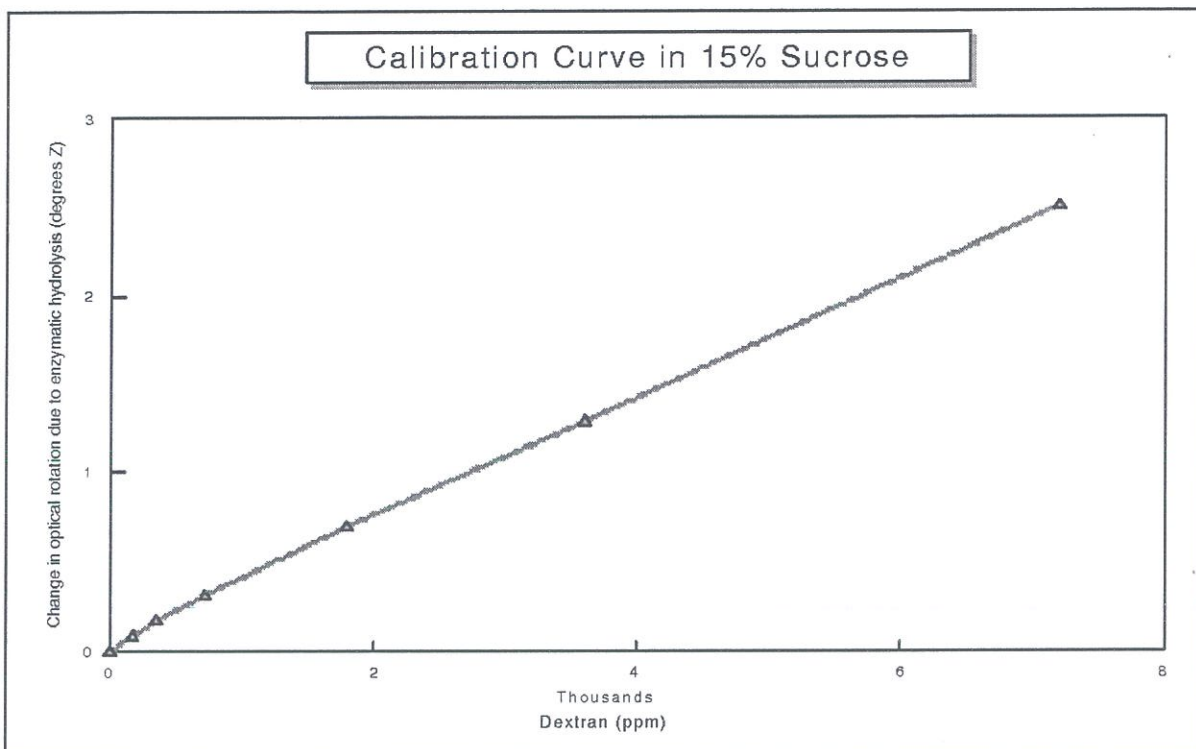
- Wavelength of light passing through the sample (generally, angle of rotation and wavelength tend to be inversely proportional)
- Temperature of the sample (generally the two are directly proportional)
- Length of the sample cell (input by the user into most automatic polarimeters to ensure better accuracy)
- Filling conditions (bubbles, temperature and concentration gradients).

Calibration:

Traditionally, a sucrose solution with a defined concentration was used to calibrate polarimeters relating the amount of sugar molecules to the light polarization rotation.^[9] Nowadays, quartz plates or quartz control plates of different thickness serve as standards to calibrate polarimeters and saccharimeters. In order to ensure reliable and comparable results, quartz plates can be calibrated and certified by metrology institutes. However, Alternatively, calibration may be checked using a Polarization Reference Standard, which consists of a plate of quartz mounted in a holder perpendicular to the light path.



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Applications:

- Identification of stereoisomers a polarimeter can be used to identify which isomer is present in a sample – if it rotates polarized light to the left, it is a levo-isomer, and to the right, a dextro-isomer.
- It can also be used to measure the ratio of enantiomers in solutions.

The optical rotation is proportional to the concentration of the optically active substances in solution.

Food, beverage and pharmaceutical industries:

- Concentration and purity measurements quality in the food & beverage and pharmaceutical industries.
- It is also used in agriculture, narcotics, vitamins, antibiotics, steroids.
- Measuring sugar content in candies and beverages.



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ADVANTAGES:

- Simple, fast, less complex
- Inexpensive
- Samples remain unchanged after procedure


LIMITATIONS:

- Large sample volumes with high substance concentration are required.
- Sensitive to scattering and motion.
- Low selectivity.
- Birefringence noise.
- Laser safety regulations

• References:

1. "Polarimeter | WordNet Search". wordnetweb.princeton.edu. Retrieved 2023-04-27. Jump up to:^a ^b "Polarimeter". physics.kenyon.edu. Retrieved 2023-04-27.
2. Hart, C. (2002), Organische Chemie, Wiley-VCH, [ISBN 3-527-30379-0](https://www.wiley-vch.de/publish/getitem.asp?isbn=3-527-30379-0)
3. Carey, F. A.; R. J. Sundberg (2007). *Advanced Organic Chemistry, Part.*




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ICT Tools utilization by Faculty:

ICT tools help faculty better organize and present information. Typing up course notes in Microsoft Word or Google Docs, or creating a PowerPoint presentation, helps to focus less on how to teach and more on what to cover. During class, when project those notes onto a big screen it gives students an indication of where the lesson is going. If class is especially proficient at finding them, it's easy to refocus and redirect when the lesson content is neatly organized on screen.



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II B Pharmacy Physical Pharmacy Lesson Plan -BP302T

Course code	Course title	Class	Name of the faculty - Designation	No of students	Total periods /year	
					Lectures	Tutorials
BP302T	Physical pharmacy I	II B pharmacy	M.Rajeswar Rao Assocprofessor (pharmaceutics)	108	60	0

Week no	Lecture no	Topic to be covered	Teaching aid	Date on which completed
	UNIT 1	Solubility of Dugs		
Week 1	L1	Introduction To Physical Pharmaceutics	Chalk&Talk	08-11-2022
	L2	Scope Of Physical Pharmaceutics	Chalk&Talk	09-11-2022
	L3	Objectives Of Physical Pharmaceutics	Chalk&Talk	10-11-2022
	L4	Physicochemical Properties In The Formulation	Chalk&Talk	11-11-2022
	L5	Solubility Of Drug- Solubility Expressions	Power Point	14-11-2022
Week 2	L6	Mechanism Of Solute Solvent Interactions	Chalk&Talk	15-11-2022
	L7	Ideal Solubility Parameters	Chalk&Talk	16-11-2022
	L8	Solvation And Association	Chalk&Talk	17-11-2022
	L9	Quantitative Approach To The Factors Influencing Solubility Of Drugs	Power Point	18-11-2022
Week 3	L10	Diffusion Principles In Biological Systems	Chalk&Talk	21-11-2022
	L11	Solubility Of Liquids In Liquids, (Binary Solution, Ideal Solutions), Raoult's Law	Chalk&Talk	23-11-2022
	L12	Real Solutions	Video Lecture	24-11-2022
	L13	Partially Miscible Liquids	Chalk&Talk	25-11-2022
	L14	Critical Solution, Temperature and Applications	Chalk&Talk	28-11-2022
	UNIT 2	State of and Matter and Properties of matter		
Week 4	L15	Distribution Law Its Limitations and Applications	Power Point	29-11-2022
	L16	States Of Matters and Properties of Matter- State of Matter	Chalk&Talk	30-11-2022
	L17	Change In the State Of Matter	Animation	01-12-2022





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	L18	Latent Heats	Chalk&Talk	02-12-2022
Week 5	L19	Vapour Pressure	Video Lecture	05-12-2022
	L20	Sub Limitations Critical Point	Chalk&Talk	06-12-2022
	L21	Eutectic Mixtures	Chalk&Talk	07-12-2022
	L22	Gases ,Aerosols Inhalers	Chalk&Talk	08-12-2022
	L23	Relative Humidity	ICT	09-12-2022
Week 6	L24	Liquid Complex's	Chalk&Talk	12-12-2022
	L25	Liquid Crystals	Chalk&Talk	13-12-2022
	L26	Glassy States	Power Point	14-12-2022
Week 7	L27	Solid Crystalline	Chalk&Talk	15-12-2022
	L28	Amorphous And Polymorphism	Chalk&Talk	16-12-2022
	L29	Physiochemical Properties Of Drug Molecules - Refractive Index, Optical Rotation	Chalk&Talk	19-12-2022
	L30	Dielectric Constant	Chalk&Talk	20-12-2022
	L31	Dipole Moment	Video lecture	21-12-2022
	L32	Dissociation Constant	Chalk&Talk	22-12-2022
	L33	Determination And Applications	Chalk&Talk	23-12-2022
	Mid - I Exams			26-12-2022 to 31-12-2022
	UNIT 3	Surface and Interfacial Phenomenon		
Week 8	L34	Surface And Interfacial Phenomenon - Liquid Interface	Video lecture	02-01-2023
	L35	Surface And Interfacial Tension	Chalk&Talk	03-01-2023
	L36	Surface Free Energy	Power Point	04-01-2023
	L37	Measurement Of Surface And Interfacial Tension	Chalk&Talk	05-01-2023
	L38	Spreading Coefficient	Chalk&Talk	06-01-2023
	L39	Adsorption At Liquid Interface	Chalk&Talk	09-01-2023
Week 9	L40	Surface Active Agents	Chalk&Talk	10-01-2023
	L41	Hlb Scale	Power Point	17-01-2023
	L42	Solubilization	Chalk&Talk	18-01-2023
Week 10	L43	Detergency	Chalk&Talk	19-01-2023
	L44	Adsorption at Solid Interface	Power Point	20-01-2023

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	UNIT 4	Complexation and Protein Binding		
	L45	Complexation & Protein Binding- Introduction	Chalk&Talk	23-01-2023
	L46	Classification Of Complexation	Chalk&Talk	24-01-2023
Week 11	L47	Applications	Chalk&Talk	25-01-2023
	L48	Method Of Analysis	Chalk&Talk	27-01-2023
	L49	Protein Binding	Video Lecture	30-01-2023
	L50	Complexation & Drug Actions	Chalk&Talk	31-01-2023
	L51	Crystalline Structure of Complexes & Thermodynamic Treatment of Stability Constants	Chalk&Talk	01-02-2023
	UNIT 5	pH, Buffers and Isotonic Solutions		
Week 12	L52	pH, buffers and isotonic solutions- sorensen's ph scale	Power point	02-02-2023
	L53	pH Determination	Chalk&Talk	03-02-2023
	L54	Application Of Buffers	Chalk&Talk	06-02-2023
	L55	Buffer Equation	Chalk&Talk	07-02-2023
	L56	Buffer Capacity	Chalk&Talk	08-02-2023
	L57	Buffers In Pharmaceutical & Biological Systems	Power Point	09-02-2023
Week 13	L58	Buffers In pharmaceutical & Biological Systems	Chalk&Talk	10-02-2023
	L59	Buffered Isotonic Solutions	Chalk&Talk	13-02-2023
	L60	Buffer Actions on Biological Systems	Animation	14-03-2023
Week 14		MID -II EXAMS	20-02-2023 to 26-02-2023	
		Preparation And Practical's	27-02-2023	
		End exams	06-03-2023	


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III- Pharm D Pharmacology-II Lesson Plan

Course code	Course title	Class	Name of the faculty Designation	No of students	Total periods /year	
					Lectures	Tutorials
T301	Pharmacology-II	III- year	B. Rama Vathi M pharm pharmacology	23	100	0

Week No	Lecture No	Topic to be Covered	Teaching Aid Topic	Date on which Completed
	UNIT 1-	Drugs Acting on Blood		
WEEK 1	L1	Scope Of the Subject	Chalk&Talk	17-08-22
	L2	Objectives	Chalk&Talk	21-08-22
	L3	Introduction	Chalk&Talk	22-08-22
	L4	Pharmacology of Drugs Acting on Blood	Power point	22-08-22
WEEK 2	L5	Blood Forming agents	Chalk&Talk	31-08-22
	L6	Anticoagulants Introduction	Chalk&Talk	04-09-22
	L7	Anticoagulants Classification	Chalk &Talk	05-09-22
	L8	MOA of Anticoagulants	Power point	11-09-22
	L9	Anticoagulants Indications	Chalk &Talk	11-09-22
WEEK 3	L10	Thrombolytics Introduction	Chalk &Talk	12-09-22
	L11	Thrombolytics Classification	Chalk &Talk	14-09-22
	L12	Thrombolytics MOA And Side Effects	Power point	18-09-22
	L13	Thrombolytics Indications	Chalk &Talk	21-09-22
WEEK 4	L14	Antiplatelet Agents Introduction	Chalk &Talk	21-09-22
	L15	Antiplatelet Agents Classification	Chalk &Talk	25-09-22
	L16	Antiplatelet Agents MOA and Side Effects	Power point	26-09-22
	L17	Antiplatelet Agents Indications	Animation	28-09-22
	L18	Haemopoietics Introduction	Chalk&Talk	03-10-22
WEEK 5	L19	Haemopoietics Classification	Chalk&Talk	04-10-22
	L20	Haemopoietics MOA And Side	Power point	06-10-22

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	L21	Haemopoietics Indications	Chalk&Talk	10-10-22
	L22	Plasma Expanders Introduction	Chalk&Talk	10-10-22
WEEK 6	L23	Plasma Expanders classification	Chalk&Talk	11-10-22
	L24	plasma expanders MOA and Side effects	Power point	13-10-22
	L25	plasma expanders Indications	Chalk&Talk	17-10-22
	L26	Pharmacology of drugs acting on Renal System	Power Point	18-10-22
	UNIT 2	Pharmacology of Drugs Acting on Renal system		
	L27	Diuretics Introduction	Chalk&Talk	20-10-22
WEEK 7	L28	Diuretics Classification	Chalk&Talk	20-10-22
	L29	Diuretics MOA and Side effects	Animation	25-10-22
	L30	Diuretics Indications	Chalk&Talk	27-10-22
		MID EXAM -1	31-10-2022 to 5-10-2022	
	L31	Antidiuretics Introduction	Chalk&Talk	07-11-22
	L32	Antidiuretics Classification	Chalk&Talk	08-11-22
	L33	Antidiuretics MOA and Side effects	Power point	10-11-22
	L34	Antidiuretics Indications	Chalk&Talk	14-11-22
	UNIT 3	Chemotherapy		
WEEK 8	L35	Introduction	Chalk&Talk	15-11-22
	L36	Sulphonamides	Chalk&Talk	17-11-22
	L37	Co-Trimoxazole	Animation	21-11-22
	L38	Penicillin's	Chalk&Talk	22-11-22
	L39	Cephalosporins	Power point	24-11-22
WEEK 9	L40	Tetracyclines	Chalk&Talk	28-11-22
	L41	Chloramphenicol	Chalk&Talk	29-11-22
	L42	Macrolides	Power point	1-12-22
WEEK 10	L43	Aminoglycosides	Chalk&Talk	5-12-22
	L44	Sulphonamides	Power point	06-12-22
	L45	Polypeptide	Video lecture	12-12-22
	L46	Quinolines	Chalk&Talk	13-12-22

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WEEK 11	L47	Fluroquinolone's	Chalk&Talk	15-12-22
	L48	Antifungal	Chalk&Talk	19-12-22
	L49	Antiviral	Power point	20-12-22
	L50	Chemotherapy of tuberculosis	Chalk&Talk	22-12-22
	L51	Chemotherapy of leprosy	Chalk&Talk	23-12-22
	L52	Chemotherapy of Malaria	Chalk&Talk	25-12-22
WEEK 12	L53	Chemotherapy of protozoal infections (amoebiasis)	Chalk&Talk	26-12-22
	L54	Chemotherapy of protozoal infections (Giardiasis)	Video lecture	27-12-22
	L55	Pharmacology of Antihelminthic drugs	Chalk&Talk	28-12-22
	L56	Chemotherapy of cancer	Chalk&Talk	29-12-22
	UNIT 4	Immunopharmacology		
	L57	Immunopharmacology	Chalk&Talk	02-01-23
WEEK 13	L58	Pharmacology of immunosuppressants	Chalk&Talk	03-01-23
	L59	Pharmacology of stimulants	Power point	05-01-23
	UNIT 5	Principles of Animal Toxicology		
	L60	Acute Toxicity	Chalk&Talk	10-01-23
	L61	Sub-Acute Toxicity	Chalk&Talk	12-01-23
	L62	Chronic Toxicity	Chalk&Talk	16-01-23
	L63	The Dynamic Cell	Chalk&Talk	17-01-23
	L64	Structure and functions of cell components	Power point	19-01-23
	L65	Cellular activities	Chalk&Talk	31-01-23
	MID EXAM -2		23-01-2023 to 29-01-2023	
	L66	DNA Replication	Chalk&Talk	02-02-23
	L67	The Cell Cycle	Chalk&Talk	06-02-23
	L68	Cell Signalling	Power point	07-02-23
	L69	Signal Transduction Pathways	Chalk&Talk	07-02-23
	L70	P38 kinase	Chalk&Talk	09-02-2023
	L71	JNK pathway	Chalk&Talk	13-02-23
L72	RAS pathway	Chalk&Talk	14-02-23	





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	L73	PI3-kinase pathways	Chalk&Talk	14-02-23
	L74	Biosensors	Chalk&Talk	16-02-23
	L75	Gene	Animation	20-02-23
	L76	Genome structure and function	Chalk&Talk	21-02-23
	L77	Gene structure	Chalk&Talk	23-02-23
	L78	Organization and elucidation of genetic code	Video lecture	27-02-23
	L79	Gene expression	Chalk&Talk	28-02-23
	L80	Expression systems	Powerpoint	28-02-23
	L81	Transcription	Chalk&Talk	02-03-23
	L82	Transcription factors	Chalk&Talk	06-03-23
	L83	RNA processing	Chalk&Talk	07-03-23
	L84	Protein synthesis	Chalk&Talk	09-03-23
	L85	Altered gene functions	Chalk&Talk	09-03-23
	L86	Genetic abnormalities	Power Point	13-03-23
	L87	Types of abnormalities	Chalk&Talk	14-03-23
	L88	Tumor suppressor genes	Animation	16-03-23
	L89	The gene sequencing	Chalk&Talk	20-03-23
	L90	Gene mapping	Chalk&Talk	21-03-23
	L91	cloning of human disease genes.	Chalk&Talk	23-03-23
	L92	Introduction to gene therapy	Video lecture	27-03-23
	L93	Introduction to gene targeting	Chalk&Talk	28-03-23
WEEK 14	L94	Introduction to gene targeting	Chalk&Talk	03-04-23
	L95	Recombinant DNA technology	Chalk&Talk	04-04-23
	Principles of Animal Toxicology			
	L96	Principles	Chalk&Talk	04-04-23
	L97	Processes	Chalk&Talk	06-04-23
	L98	Applications	Chalk&Talk	10-04-23
	L99	Toxicological Studies	Power Point	12-04-23
	L100	Toxicological Studies of different drugs	Chalk&Talk	13-04-23
	MID EXAM -3		17-04-2023 to 23-04-2023	



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		Preparation & Practical's	24-04-2023
		END EXAMS	01-05-2023




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