

UNIVERSITY

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"CELEBRATING DREAMS"

**Agenda for the 8<sup>th</sup> Board of Studies (BoS) Meeting at  
School of Pharmacy,**

ITM University Gwalior, Madhya Pradesh on 17/07/2023 at 11.00 A.M

ITEM No.	ITEM
I	Welcome Address by the Dean School of Pharmacy
<b>INSTITUE ITEMS – Agenda for Ratification</b>	
II	To consider and confirm the minutes of the 6 <sup>th</sup> BoS Meeting held online on 18/02/2022 and its Action Taken Report (ATR)
III	Approval of Academic Calendar to B.Pharm (Odd Semester), and M.Pharm (I & III Semester) for AY 2023-24
IV	To discuss and review the feedback on curriculum of following programs for the AY 2022-23 semester examination (B.Pharm & M.Pharm.)
V	Approval of syllabi and course module for new PG program (M.Pharm – Pharmaceutical Analysis and M.Pharm – Pharmaceutical Regulatory Affairs) started from the current AY 2023-24*.
VI	Approval of syllabi and course module for new Pharm.D (Doctor of Pharmacy) program started from the current AY 2023-24*.
VII	To review and recommend the syllabus of new programs with schemes, CO, PO, PEO, and PSO.
VIII	To review and recommend the syllabus of new programs for the addition of new value added courses in B Pharm and M Pharm for AY 2023-24 with minimum credit to the Academic Council
IX	Any other matter (with the permission of Chairman, BoS)

\* Applied and subject to consideration of approval by PCI

Minutes of the 8<sup>th</sup> of the Board of Studies of  
School of Pharmacy, ITM University Gwalior held on  
17<sup>th</sup> July, 2023 at 11.00 AM

The 8th meeting of the Board of Studies (BoS) was held on 17.07.2023 at 11.00 AM at Dean's Office.

**Members Present**

- |                                   |  |
|-----------------------------------|--|
| 1. Dr. M. Alagusundaram           | Chairman   |
| 2. Mr. Nem Kumar Jain             | Member (HOD i/c)   |
| 3. Dr. Subodh Kumar Dubey         | Member (BOS Co-ordinator)  |
| 4. Dr. Tirthankar Choudhury       | Member (M.Pharm Pharmaceutical<br>Regulatory Affairs Co-ordinator) |
| 5. Dr. Chinã Babu D               | Member (M.Pharm Pharmaceutical<br>Analysis Co-ordinator)           |
| 6. Dr. G Sai Sri Harsha           | Member (Pharm.D Co-ordinator)                                      |
| 7. Dr. Goli Venkateswarlu         | Member (Research Co-ordinator)                                     |
| 8. Mr. Shailendra Singh Narwariya | Member (Exam Co-ordinator)   |
| 9. Mrs. Vijeta Bhattacharya       | Member (Class in-charge/Mentor)                                    |
| 10. Dr. Suman Jain                | Expert nominated by the Vice-Chancellor ITM                        |
| 11. Mr. Pawari Kumar              | Member from the Industry   |
| 12. Dr. Dinesh Singh Tomar        | Invited Member (COE ITM)   |
| 13. Dr. Ranjeet Singh Tomar       | Invited Member (Dean Academics-I ITM)                              |
| 14. Mr. Brajesh Singh             | Alumni Member  |

**Total No of Absent: Nil**

P.O.

At the outset, **Dr. M. Alagusundaram**, Professor and Dean, School of Pharmacy, ITM University & Chairman of the Board of Studies extended a warm welcome to Hon'ble expert **Dr. Suman Jain** (Director and Principal School of Pharmaceutical Sciences) **Dr. Ranjeet Singh Tomar** (Dean Academics I, ITM University), **Dr. Dinesh Singh Tomar** (Controller of Examinations, ITM University) and members of the Board of Studies who, in spite of their busy schedules, made it possible to attend the meeting. The BoS members also welcomed the Chairman. The list of members present in the meeting and leave of absence is annexed. Thereafter, the Chairperson highlighted important academic development that took place in the College in the recent past. After the brief introductory remarks, the agenda items of the meeting were taken up and discussed by the BoS members and resolved subsequently.

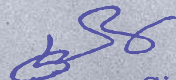
Mrs. Vijeta Bhattacharya (Member/ Class in-charge) to note down the minutes of the meeting and coordinated the overall conduct of the meeting.

**The detailed resolution for the proposed agenda on the 8<sup>th</sup> Board of Studies (BoS) meeting was appended below.**

**Item No. II To consider and confirm the minutes of the 6th BoS Meeting held online on 18/02/2022 and it's Action Taken Report (ATR)**

The Minutes of the aforesaid Meeting of the Board of Studies conducted on 18.02.2022 were circulated to all the members. As per the basis of student feedback and complaints some faculties had been received show-cause notice Action Taken Report is placed and read out the same before the BoS for confirmation.

**Resolution:** The BoS members resolved to confirm its aforesaid minutes. The members also noted with satisfaction of the ATR on the Minutes of the Board of Studies mentioned under the captioned agenda.

  
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**Item No. III Approval of Academic Calendar to B. Pharm (Odd Semester), and M. Pharm (I & III Semester) for AY 2023-24**

Proposed Academic Calendars for B. Pharm (Odd Semester), M.Pharm (I year & III year), for AY 2023-24, and necessary suggestions are invited.

**Resolution:** Members of the board perused and approved the Academic Calendar for B. Pharm (Odd Semester), and M. Pharm (I year & III year) for the AY 2022-23. The members suggested and recommended to be followed as per the university guidelines. The members of BoS felt that deliberate discussions or changes if any are required may be submitted for discussion in the next Academic Council meeting of the ITM University.

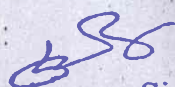
**Item No. IV To discuss and review the feedback on the curriculum of the following programs for the AY 2022-23 semester examination (B. Pharm & M.Pharm)**

The academic performance of the last AY 2022-23 was placed and details of feedback on the curriculum were also read out the same for the necessary suggestions are invited.

**Resolution:** The BoS Experts and members also suggested to collecting the feedback from Stakeholders, parents and alumni members for improvement in the curriculum towards the betterment and benefit of the students.

**Item No. V Approval of syllabi and course module for new PG program (M. Pharm- Pharmaceutical Analysis and M.Pharm – Pharmaceutical Regulatory Affairs) started from the current AY 2023-24.**

The Pharmacy Council of India approved to start of the new PG program (M.Pharm – Pharmaceutical Analysis and M. Pharm Pharmaceutical Regulatory Affairs) with the intake of 15 seats each from the current AY 2023-24 onwards. The eligibility criteria and duration of the course is also mentioned against each:

  
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S. No.	Approved New Course*	Eligibility
1.	M.Pharm. – Pharmaceutical Analysis (Intake – 15 seats)	B. Pharm Degree examination of an Indian university established by law in India from an institution approved by Pharmacy Council of India and has scored not less than 55 % of the maximum marks (aggregate of 4 years of B.Pharm)
2.	M.Pharm- Pharmaceutical Regulatory Affairs (Intake – 15 seats)	

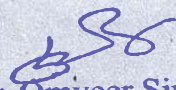
\*Subject to the consideration of approval by PCI

**Resolution:** It was decided unanimously that the regulations, scheme and syllabi be adapted into as prescribed by PCI, New Delhi (Gazette Notification M.Pharmacy Course regulation-2014 (Notification in the gazette of India No.362, Dt: December 11, 2014). The BoS committees unanimously decided, to follow the same pattern of value added/audit courses existing M.Pharm Pharmaceutics to be followed.

**Item No. VI Approval of syllabi and course module for new Pharm.D (Doctor of Pharmacy) program started from the current AY 2023-24\*.**

**Resolution:** The committee unanimously decided to follow the PCI regulations 2008 (Regulations framed under section 10 of the Pharmacy Act, 1948 (8 of 1948). The following suggestions were made by the committee members for updating syllabus and curriculum, decided to add the following Value Added Courses up to 5<sup>th</sup> year Pharm.D and the same is recommended to the Academic Council.

\*Subject to the consideration of approval by PCI

  
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1. 1<sup>st</sup> year PharmD-Communication Skill (Non-University Exam)
2. 2<sup>nd</sup> year PharmD-Environmental Science (Non-University Exam)
3. 3<sup>rd</sup> year Registration of students for Swayam and NPTEL examination
4. 4<sup>th</sup> year PharmD- (RPE-Research Publication Ethics-1) (Non-University Exam)
5. 5<sup>th</sup> Year PharmD- (RPE-Research Publication Ethics-2) (Non-University Exam)

**Item No. VII** To review and recommend the syllabus of new programs with schemes, CO, PO, PEO, and PSO embedded.

**Resolution:** Reviewed and framed the syllabus with CO, PO, PEO, and PSO embedded.

**Item No. VIII** To review and recommend the syllabus of new programs for the addition of new value-added courses for AY 2023-24 with minimum credit to the Academic Council


**Resolution:** Reviewed and recommended the syllabus of new programs for the addition of new value-added/audit courses from the AY 2023-2024 by an expert committee and approved by the academic council.

**Item No. IX** To introduce new elective courses in B.Pharm 5th Semester for AY 2023-24 to enhance the learning capabilities of the students

**Resolution:** With the recommendation of BoS committee, 4 new elective subjects were introduced;

1. **BP510ET - International Regulatory Requirement for GMP:** Covers Good Manufacturing Practices (GMP) regulations, ensuring pharmaceutical quality and safety through compliance with international standards.
2. **BP511ET - Pharmaceutical Product Development:** Focuses on the lifecycle of drug development, including research, formulation, clinical trials, and market launch.
3. **BP512ET - Purification of Pharmaceutical Compounds:** Examines methods for purifying pharmaceutical compounds, emphasizing techniques like chromatography and the importance of drug purity.

Minimum  
1 Credit  
Course

  
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4. **BP513ET - Introduction to Intellectual Property Rights:** Introduces intellectual property concepts relevant to pharmaceuticals, including patents and trademarks, and their impact on innovation and market competition.

❖ **Syllabus of new and approved courses are attached in annexure II.**

Item No. X To introduce new elective courses in B.Pharm 6th Semester for AY 2023-24 to enhance the learning capabilities of the students

Resolution: With the recommendation of BoS committee, 3 new elective subjects were introduced;

1. **BP611ET - Artificial Intelligence in Pharmaceuticals:** Explores the applications of AI in drug discovery, development, and manufacturing, focusing on enhancing efficiency, precision, and decision-making in the pharmaceutical industry.

2. **BP612ET - GMP in Pharma Industry:** Delves deeper into Good Manufacturing Practices (GMP), emphasizing their critical role in ensuring product quality, compliance, and safety in pharmaceutical manufacturing.

3. **BP613ET - Healthcare Marketplace Capstone:** A capstone project that integrates knowledge from previous courses, focusing on real-world challenges in the healthcare marketplace, encouraging practical application and problem-solving in a collaborative setting.

❖ **Syllabus of new and approved courses are attached in annexure II.**

Item No. XI To introduce new elective course in M.Pharm 1st Semester for AY 2023-24 to enhance the learning capabilities of the students

Resolution: To enhance learning capabilities, a new elective course was introduced in the M.Pharm 1<sup>st</sup> and 2<sup>nd</sup> Semester for AY 2023-24, based on the recommendation of the Board of Studies (BoS) committee.

1. **MPH108ET - Good Manufacturing in Pharma:** Focuses on Good Manufacturing Practices (GMP) in the pharmaceutical industry, covering quality assurance, regulatory compliance, and manufacturing processes to ensure product safety and efficacy.

2. **MPH208ET - Introduction to Intellectual Property Rights:** Provides

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foundational knowledge of intellectual property (IP) concepts relevant to pharmaceuticals, including patents, trademarks, and their implications for innovation and market strategy.


❖ **Syllabus of new and approved courses are attached in annexure III.**

**Item No. XIII Any other matter (with the permission of Chairman, BoS)**

8<sup>th</sup> .BOS successfully completed with the experts and committee members. All the agenda were approved and recommended by the Experts and committee members. Dr. Suman Jain advises are noted for the implementation.

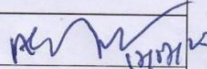


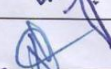
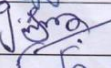
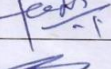
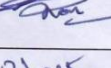
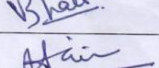
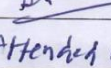
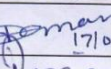
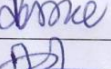
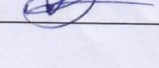

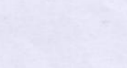
The 8<sup>th</sup> Board of Studies meeting ended by proposing a vote of thanks by Dr. Tirthankar Choudhury, Professor and member.

**Duration of Meeting: 11:00 AM to 01:00 PM**

  
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**REGISTRAR**  
**ITM University**  
**Gwalior (M.P.)**



**MEMBERS PRESENT:**

S. No.	Name	Designation	Signature
1	Dr. M Alagusundaram	Professor and Dean	
2	Mr. Nem Kumar Jain	Associate Professor	
3	Dr. Subodh Kumar Dubey	Professor	
4	Dr. Tirthankar Choudhury	Professor	
5	Dr. China Babu D	Associate Professor	
6	Dr. G. Sai Sri Harsha	Associate Professor	
7	Dr. Goli Venkateswarlu	Associate Professor	
8	Mr. Shailendra Singh Narwariya	Associate Professor	
9	Mrs. Vijeta Bhattacharya	Associate Professor	
10	Dr. Suman Jain	Professor and Director	
11	Mr. Pawan Kumar	QA Manager	 17/7/23.
12	Dr. Dinesh Singh Tomar	Professor	 Attended in yk on line
13	Dr. Ranjeet Singh Tomar	Professor	 17/07/2023
14	Mr. Brajesh Singh	Representative	

## Syllabus-2023-2024

(SOP)(BPharm)


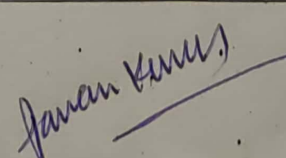
Title of the Course	Online certified courses related to Pharmacy I *
Course Code	BP509ET

## Part A

Year	Semester	Credits	L	T	P	C
			1	0	0	1
Course Type	Theory only					
Course Category	Discipline Specific Elective					
Pre-Requisite/s			Co-Requisite/s			
Course Outcomes & Bloom's Level	CO1- To gain the skill and knowldege in pharmaceutical domain(BL3-Apply)					
Coures Elements	Skill Development ✓ Entrepreneurship ✗ Employability ✗ Professional Ethics ✗ Gender ✗ Human Values ✗ Environment ✗	SDG (Goals)				

## Part B

Modules	Contents	Pedagogy	Hours
1	online course are available in coursera, edx, udemy and NEPTEL. Students are instructed to registered in mooc course and submit the certificate after completion	Blended	30

  
 May  
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Part D(Marks Distribution)

Theory

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation
	20	20	5	0	0

Practical

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation

Part E

Books	NA
Articles	NA
References Books	NA
MOOC Courses	NA
Videos	NA

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSC
CO1	3	2	1	-	-	-	-	-	-	-	3	1	-	-	2
CO2	2	2	2	1	-	-	-	-	-	-	2	1	1	1	1
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Handwritten signatures:*  
 Navey  
 M.K. Jain

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 Parvati

HOD  
 School of Pharmacy  
 ITM University  
 Gwalior, Madhya Pradesh

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 Dr. Omveer Singh  
 REGISTRAR  
 ITM University  
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## Syllabus-2023-2024

(SOP)(BPharm)

<b>Title of the Course</b>	International Regulatory Requirements for Good Manufacturing Practices
<b>Course Code</b>	BP510ET

### Part A

Year	Semester	Credits	L	T	P	C
			1	0	0	1
<b>Course Type</b>	Theory only					
<b>Course Category</b>	Discipline Specific Elective					
<b>Pre-Requisite/s</b>			<b>Co-Requisite/s</b>			
<b>Course Outcomes &amp; Bloom's Level</b>	CO1- Understand the different quality level for global regulatory agency ( <b>BL2-Understand</b> ) CO2- To apply the knowldge of Qulaity management guidelines in real scenario( <b>BL3-Apply</b> )					
<b>Coures Elements</b>	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values ✓ Environment X	<b>SDG (Goals)</b>	SDG3(Good health and well-being) SDG4(Quality education) SDG12(Responsible consunption and production) SDG16(Peace Justice and strong institutions)			

*Handwritten signatures and notes:*  
 [Signature] Panwar  
 [Signature] Kumar  
 [Signature] Meher

### Part B

Modules	Contents	Pedagogy	Hours
JNIT 1	Overview on Product Life cycle Management , Good Manufacturing Practices and its Regulations , Functions of pharmaceutical and healthcare industries (Quality, Production, RA, R&	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	10
JNIT 2	Good Documentation Practices, Data Integrity Assurance, Qualification and Validation, Change Control, Deviation Management, Out of specifications, Data Integrity Assurance	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	10
JNIT 3	CAPA & QRM, Complaint Handling & Product Recall, GMP requirements in Medical Devices, GMP Requirements in Pharmaceutical Drug substances and products, GMP for Biologics products and guidelines for injectable products	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	10

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### Part D(Marks Distribution)

#### Theory

Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation
	25	35	18	15	8

#### Practical


Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation

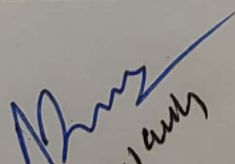
### Part E

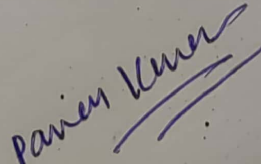
<b>Books</b>	<a href="https://iris.who.int/bitstream/handle/10665/64465/WHO_VSQ_97.01-eng.pdf?sequence=1&amp;isAllowed=y">https://iris.who.int/bitstream/handle/10665/64465/WHO_VSQ_97.01-eng.pdf?sequence=1&amp;isAllowed=y</a>
<b>Articles</b>	<a href="https://www.fda.gov/drugs/pharmaceutical-quality-resources/current-good-manufacturing-practice-cgmp-regulations,CDER-OPQ-Inquiries@fda.hhs.gov">https://www.fda.gov/drugs/pharmaceutical-quality-resources/current-good-manufacturing-practice-cgmp-regulations,CDER-OPQ-Inquiries@fda.hhs.gov</a>
<b>References Books</b>	<a href="https://iris.who.int/bitstream/handle/10665/64465/WHO_VSQ_97.01-eng.pdf?sequence=1&amp;isAllowed=y">https://iris.who.int/bitstream/handle/10665/64465/WHO_VSQ_97.01-eng.pdf?sequence=1&amp;isAllowed=y</a>
<b>MOOC Courses</b>	<a href="https://www.itsligo.ie/courses/higher-certificate-in-science-in-good-manufacturing-practice-gmp/">https://www.itsligo.ie/courses/higher-certificate-in-science-in-good-manufacturing-practice-gmp/</a>
<b>Videos</b>	<a href="https://www.youtube.com/watch?v=mFwA2KTiPwI">https://www.youtube.com/watch?v=mFwA2KTiPwI</a>

### Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSC
CO1	3	2	1	1	1	-	-	-	-	-	3	1	1	1	1
CO2	2	1	1	1	1	-	-	-	-	-	2	1	1	1	1
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

  
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 N.K. Jais

  
 Parveen Kumar

HOD  
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## Syllabus-2023-2024

(SOP)(BPharm)

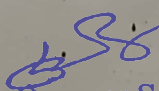
<b>Title of the Course</b>	Pharmaceutical Product Development
<b>Course Code</b>	BP511ET

Part A

Year	Semester	Credits	L	T	P	C
			3	1	0	4
<b>Course Type</b>		Theory only				
<b>Course Category</b>		Discipline Specific Elective				
<b>Pre-Requisite/s</b>			<b>Co-Requisite/s</b>			
<b>Course Outcomes &amp; Bloom's Level</b>		CO1- To recall the formulation development of different types of dosage forms (BL1-Remember) CO2- To outline the role of different pharmaceutical excipients in product development (BL2-Understand) CO3- To select the excipients for a specific drug product (BL5-Evaluate) CO4- To classify different of packaging for the drug product and materials used for primary and secondary packaging. (BL3-Apply) CO5- To choose optimization technique in the development of pharmaceutical drug product. (BL4-Analyze)				
<b>Courses Elements</b>		Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics ✗ Gender ✗ Human Values ✗ Environment ✗	<b>SDG (Goals)</b>	SDG3(Good health and well-being) SDG4(Quality education)		

*Munim*  
*1st July*

*Pooja Kumar*

  
**Dr. Omveer Singh**  
 REGISTRAR  
 ITM University  
 Gwalior (M.P.)

HOD  
 School of Pharmacy  
 ITM University  
 Gwalior, Madhya Pradesh

**Part B**

	Contents	Pedagogy	Hours
1	Introduction to pharmaceutical product development, objectives, regulations related to preformulation, formulation development, stability assessment, manufacturing and quality control testing of different types of dosage forms	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	10
JNIT 2	An advanced study of Pharmaceutical Excipients in pharmaceutical product development with a special reference to the following categories	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	10
JNIT 3	An advanced study of Pharmaceutical Excipients in pharmaceutical product development with a special reference to the following categories	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	10
JNIT 4	Optimization techniques in pharmaceutical product development. A study of various optimization techniques for pharmaceutical product development with specific examples. Optimization by factorial designs and their applications. A study of QbD and its application in pharmaceutical product development.	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	08
JNIT 5	Selection and quality control testing of packaging materials for pharmaceutical product development- regulatory considerations.	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	07

**Part C**

Modules	Title	Indicative-ABCA/PBL/ Experiments/Field work/ Internships	Bloom's Level	Hours
1	Evaluation of suspending and emulsifying agent	Experiments		

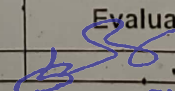
**Part D(Marks Distribution)**

**Theory**

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation
100	50	75	38	25	13

**Practical**

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation

  
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Part E

Books	1. Pharmaceutical Statistics Practical and Clinical Applications by Stanford Bolton, Charles Bon; Marcel Dekker Inc.
Articles	<a href="https://www.ema.europa.eu/en/documents/scientific-guideline/note-guidance-pharmaceutical-development_en.pdf">https://www.ema.europa.eu/en/documents/scientific-guideline/note-guidance-pharmaceutical-development_en.pdf</a>
References Books	3. Pharmaceutical Dosage Forms – Tablets Vol 1 to 3, A. Liberman, Leon Lachman and Joseph B. Schwartz
MOOC Courses	<a href="https://www.coursera.org/courses?query=pharmaceutical">https://www.coursera.org/courses?query=pharmaceutical</a>
Videos	<a href="https://www.youtube.com/watch?v=sesDthMPCRC0&amp;list=PLkxD16eG21tVre8GBj-LbjfUUuq1qghVM">https://www.youtube.com/watch?v=sesDthMPCRC0&amp;list=PLkxD16eG21tVre8GBj-LbjfUUuq1qghVM</a>

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PSC
CO1	3	1	3	1	1	-	-	-	-	-	3	-	2	1	1
CO2	2	2	1	1	1	-	-	-	-	-	1	-	1	1	1
CO3	3	1	2	1	1	-	-	-	-	-	3	-	2	2	2
CO4	2	1	2	1	1	-	-	-	-	-	1	-	1	1	1
CO5	1	1	2	2	1	-	-	-	-	-	3	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Amr*

*Mk-Jary*

*Paran Kumar*

*OS*  
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 Gwalior (M.P.)



## Syllabus-2023-2024

(SOP)(BPharm)

Title of the Course	Purification of Pharmaceutical Compounds
Course Code	BP512ET

### Part A

Year	Semester	Credits	L	T	P	C
			1	0	0	0

Course Type	Theory only		
Course Category	Skill Enhancement Courses		
Pre-Requisite/s		Co-Requisite/s	

Course Outcomes & Bloom's Level	CO1- To understand the basics of impurities in pharmaceuticals (BL2-Understand) CO2- To gain the knowledge of techniques to purify the compounds and remove the impurities the basics of impurities in pharmaceuticals (BL3-Apply)
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Courses Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)
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### Part B

Modules	Contents	Pedagogy	Hours

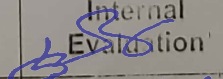
### Part D (Marks Distribution)

#### Theory

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation
50	25	35	18	15	8

#### Practical

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation

HOD  
 School of Pharmacy  
 ITM University  
 Gwalior, Madhya Pradesh  
  
  
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 REGISTRAR  
 ITM University  
 Gwalior (M.P.)

Part E

Books	<a href="https://crescent.education/wp-content/uploads/2021/06/Pharmaceutical-Organic-Chemistry.pdf">https://crescent.education/wp-content/uploads/2021/06/Pharmaceutical-Organic-Chemistry.pdf</a>
Articles	<a href="https://www.mdpi.com/books/reprint/8083-extraction-and-purification-of-bioactive-compounds">https://www.mdpi.com/books/reprint/8083-extraction-and-purification-of-bioactive-compounds</a>
References Books	<a href="https://crescent.education/wp-content/uploads/2021/06/Pharmaceutical-Organic-Chemistry.pdf">https://crescent.education/wp-content/uploads/2021/06/Pharmaceutical-Organic-Chemistry.pdf</a>
MOOC Courses	NA
Videos	

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSC
CO1	3	2	1	1	-	-	-	-	-	-	3	-	1	1	1
CO2	2	2	2	1	-	-	-	-	-	-	3	2	-	1	1
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Omveer Singh*  
*Omveer Singh*

*Pawan Kumar*

*Omveer Singh*  
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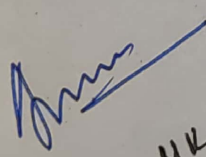
HOD  
 School of Pharmacy  
 ITM University  
 Gwalior, Madhya Pradesh

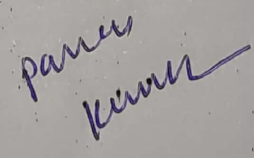
## Syllabus-2023-2024

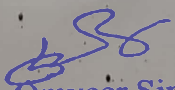
(SOP)(BPharm)

Title of the Course	Introduction to intellectual property rights
Course Code	BP513ET

Year	Semester	Credits	Part A			
			L	T	P	C
			3	1	0	4
Course Type	Theory only					
Course Category	Skill Enhancement Courses					
Pre-Requisite/s		Co-Requisite/s				
Course Outcomes & Bloom's Level	CO1- To create awareness of IPR among pharmacy students. (BL2-Understand) CO2- To make the pharmacy students aware about the pharmaceutical R & D and the activities therein. (BL2-Understand) CO3- Develop the understanding of the Intellectual Property Rights necessary for research activities in the pharmaceutical industry. (BL3-Apply) CO4- To know the database of intellectual property and TKDL (BL2-Understand) CO5- To apply the Knowledge of IPR in drafting and filling of IPR (BL3-Apply)					
Courses Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values ✓ Environment X	SDG (Goals)	SDG1 (No poverty) SDG3 (Good health and well-being) SDG4 (Quality education) SDG6 (Clean water and sanitation) SDG8 (Decent work and economic growth) SDG17 (Partnerships for the goals)			

  
 MK Jain

  
 Pankaj Kumar

  
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**Part B**

	Contents	Pedagogy	Hours
	The pharmaceutical business and The pharmaceutical R & D	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	10
NIT 2	Module 3 – Intellectual Property Rights: Introduction about patents, copyright, trademark, Industrial Designs, Geographical Indications, Trade Secrets, Module 4 – IPR: With specific reference to pharma	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	10
JNIT 3	IPR: Indian patent scenario and Patent commercialization and licensing	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board.	10
JNIT 4	Patent drafting and Patent searches; patent filing, registration, granting World Intellectual Property Organization (WIPO) and its functions	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	08
JNIT 5	IP in Traditional Knowledge, TKDL database in medicinal plants, INDIAN WEB-PORTALS FOR PATENTS AND TECHNOLOGIES	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	07

**Part C**

Modules	Title	Indicative-ABCA/PBL/ Experiments/Field work/ Internships	Bloom's Level	Hours
1	patent drafting and filing	Case Study	BL3-Apply	5

**Part D(Marks Distribution)**

**Theory**

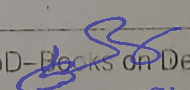
Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation
100	50	75	38	25	13

**Practical**

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation

**Part E**


<b>Books</b>	Cockburn IM. Intellectual property rights and pharmaceuticals: challenges and opportunities for economic research. The economics of intellectual property. 2009 Jan:150.
<b>Articles</b>	Savale SK, Savale VK. Intellectual property rights (IPR). World J Pharm Pharm Sci. 2016 Apr 22;5:2559-92.
<b>References Books</b>	Prabu S., Tnk S, editors. Intellectual property rights. BoD-Books on Demand; 2017 Jun 21.
<b>MOOC Courses</b>	NEPTEL
<b>Videos</b>	NA

  
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### Course Articulation Matrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSC
		2	-	1	-	-	-	3	-	2	3		1		1
		1	-	-	-	-	-	3	-	-	2		1		1
CO3	-	1	-	-	-	-	-	2	-	-	-		-	-	-
CO4	-	-	-	-	-	-	-	2	-	-	2		-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	1		-	-	-
CO6	-	-	-	-	-	-	-	-	1	-	-		-	-	-

  
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## Syllabus-2023-2024

(SOP)(BPharm)

Title of the Course	Artificial intelligence in Pharmaceutical
Course Code	BP611ET

Year	Semester	Credits	Part A			
			L	T	P	C
		3	1	0	4	

Course Type: Theory only

Course Category: Discipline Specific Elective

Pre-Requisite/s: Co-Requisite/s

Course Outcomes & Bloom's Level

CO1- Acquire an in-depth comprehension of AI applications in pharmaceutical domain. (BL2-Understand)

CO2- Recognize and counter prevalent myths associated with AI. (BL2-Understand)

CO3- Implement AI in real-life pharmaceutical use cases without the need for coding. (BL3-Apply)

CO4- To gain the knowledge of AI and how to implement in healthcare. (BL3-Apply)

CO5- Ability to apply time-series forecasting for healthcare applications. (BL3-Apply)

Courses Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG9(Industry Innovation and Infrastructure) SDG17(Partnerships for the goals)
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Part B

*Handwritten signatures: Jyoti, Anurag, MK)*

Modules	Contents	Pedagogy
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HOD  
 School of Pharmacy  
 ITM University  
 Gwalior, Madhya Pradesh

### Part D(Marks Distribution)

Theory

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation
100	50	75	38	25	13

Practical

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Min. Internal Evaluation

*Handwritten signature: Dr. Omveer Singh*  
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 Gwalior (M.P.)

Part E

Books	Harrer S, Menard J, Rivers M, Green DV, Karpas J, Jeliczkowski J, Sapovalov M, del-Alamo D, Sternke MC. Artificial intelligence drives the digital transformation of pharma. In Artificial Intelligence in Clinical Practice 2024 Jan 1 (pp. 345-372). Academic Press.
Articles	Patel J, Patel D, Meshram D. Artificial Intelligence in Pharma Industry: A Rising Concept. Journal of Advancement in Pharmacognosy. 2021; 1(2).
References Books	Bhupathyaaj M, Rani KR, Essa MM, editors. Artificial Intelligence in Pharmaceutical Sciences. CRC Press; 2023 Nov 21.
MOOC Courses	Udemy, coursera, NEPTEL
Videos	YOU TUBE

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSC
CO1	1	1	-	2	3	-	-	-	-	-	3	-	-	1	2
CO2	2	2	1	-	1	-	-	-	-	-	2	-	1	1	1
CO3	2	3	1	1	1	-	-	-	-	-	1	-	1	1	1
CO4	1	2	1	1	1	-	-	-	-	-	1	-	1	1	1
CO5	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*MR Jais*

*Ravi Kumar*

*[Signature]*

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ITM University  
Gwalior (M.P.)

HOD  
School of Pharmacy  
ITM University  
Gwalior, Madhya Pradesh

## Syllabus-2023-2024

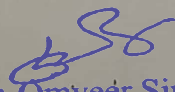
### (SOP)(BPharm)

Title of the Course		Good Manufacturing in Pharma					
Course Code		BP612ET					
		Part A					
Year	Semester		Credits	L	T	P	C
				1	0	0	1
Course Type		Theory only					
Course Category		Discipline Specific Elective					
Pre-Requisite/s		Co-Requisite/s					
Course Outcomes & Bloom's Level		<p><b>CO1-</b> To be able to understand the basics of Good Manufacturing Practice for medicinal products for human use and the current legal regulations and guidelines <b>(BL1-Remember)</b></p> <p><b>CO2-</b> To have the confidence to outline the main GMP requirements related to premises, storage facilities and personnel; <b>(BL2-Understand)</b></p> <p><b>CO3-</b> To get familiar with the principles of the GMP quality system and quality control and the important procedures when dealing with complaints and recalls <b>(BL3-Apply)</b></p>					
Courses Elements		Skill Development ✓ Entrepreneurship ✗ Employability ✓ Professional Ethics ✗ Gender ✗ Human Values ✓ Environment ✗	<b>SDG (Goals)</b>	SDG4(Quality education) SDG12(Responsible consumption and production)			

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MR Singh

*Pooja Kumar*

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Part B

	Contents	Pedagogy	Hours
JNIT 1	Introduction What is Good Manufacturing Practice? Why is GMP important? Official GMP Directives. the basic requirements of Good Manufacturing Practice., Pharmaceutical Quality System Principle and overview of the Pharmaceutical Quality System. Major updates. Development, content and implementation of PQS.	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8
JNIT 2	Personnel Key personnel. Background and duties of the Qualified person. Duties of the Head of production department. Duties of the Head of quality control. Person releasing the batch. Consultants. Personnel training and hygiene, Premises and Equipment Production area. Storage area. Quality control areas. Ancillary areas. Equipment.	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8
JNIT 3	Documentation Premises. Generation and control of documentation. Types of documents and specifications. Manufacturing formula and processing instructions. Packaging instructions. Procedures and records., Production General principles. Prevention of cross-contamination in production. Guidelines for starting materials. Processing operations. Packaging materials and operations. Guidelines for finished products.	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8
JNIT 4	Quality Control General principles. Main tasks of the Quality control department. Technical transfer of testing methods. Transfer protocol., Complaints and Recalls GMP Guidelines related to complaints. Classification of defects. Product Recalls.	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8

*Dr. Omveer Singh*

Part D(Marks Distribution)

Theory

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation
100	50	75	38	25	13

Practical

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation

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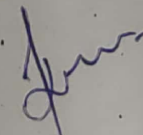
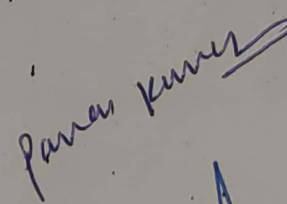
Part E


Books	Karmacharya JB. Good manufacturing practices (GMP) for medicinal products. Promising Pharmaceuticals. 2014;101.
Articles	Patel KT, Chotai NP. Pharmaceutical GMP: past, present, and future—a review. Die Pharmazie-An International Journal of Pharmaceutical Sciences. 2008 Apr 1;63(4):251-5.
References Books	Durivage MA, editor. The Certified Pharmaceutical GMP Professional Handbook. Quality Press; 2016 May 23.
MOOC Courses	UDEMY, COURSERA, PHARMASTATE ACADEMY
Videos	You tube

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSC
CO1	3	-	-	1	2	-	2	2	1	-	3	-	1	1	1
CO2	2	2	-	1	3	-	2	1	1	-	2	-	1	1	1
CO3	1	1	-	1	1	-	1	1	1	-	1	-	1	1	1
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

  
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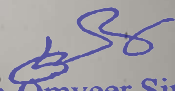
  
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 Pawan Kumar

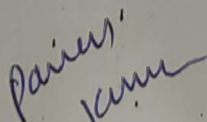
  
 HOD  
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 Gwalior, Madhya Pradesh

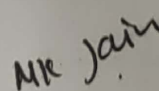
## Syllabus-2023-2024

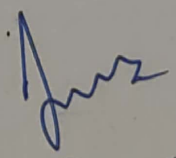
(SOP)(BPharm)

Title of the Course		Healthcare Marketplace Capstone						
Course Code		BP613ET						
Part A								
Year		Semester		Credits	L	T	P	C
					1	0	0	1
Course Type		Theory only						
Course Category		Ability Enhancement Courses						
Pre-Requisite/s				Co-Requisite/s				
This course is offered by the University of Minnesota on the Coursera platform. students are requested to enroll the programme and follow the instructions given by institute								
Course Outcomes & Bloom's Level		CO1- Learn new concepts from industry experts( <b>BL2-Understand</b> ) CO2- Gain a foundational understanding of a subject or tool, Develop job-relevant skills with hands-on projects( <b>BL3-Apply</b> )						
Courses Elements		Skill Development X Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X		SDG (Goals)		SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth)		

  
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 Gwalior, Madhya Pradesh

Part B

Modules	Contents	Pedagogy	Hours
	What is your Health Marketplace Innovation? In this Milestone you will describe a new medical innovation in the context of what makes it extraordinary for investment or use in a community. Your final project for this capstone will feature 4 critical milestone components for an assessment of new innovation. Once completed, hope is that you have a body of illustrate your, critical thinking to advance your career or switch careers into the healthcare market.		
2	What is the Voice of the Healthcare Provider For the second milestone you will complete an analysis of what the key customer - the medical provider - will required of the new technology or innovation to want to use it. This will require you to ask medical providers that you encounter about the nature of the technology and whether would find it of value. Remember to always tell provider that you are a student not a sales agent. The health care delivery course provides great insight into how care is delivered and will provide the context and background for your brief 2-3 page memo resulting from this milestone		
3	Regulatory and IP Status of the Innovation, How will the Innovation Generate Revenue, A great innovation needs a solid revenue model for survival-ability. In this milestone you will be asked to use parts of the prior three capstones to generate your own market report. Identifying the innovation's market space, voice of the customer, IP and regulatory path and final path roof reimbursement are critical components for identifying whether a medical innovation should advance and be sustained commercially		
4	Submitting the Final Project		

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Part D (Marks Distribution)

Theory

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation
25	20	5	5	0	0

Practical

Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation

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*Signature*



Part E

Books	
Articles	
References Books	
MOOC Courses	<a href="https://www.coursera.org/learn/healthcare-marketplace-capstone">https://www.coursera.org/learn/healthcare-marketplace-capstone</a>
Videos	

Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSC
CO1	3	2	1	-	1	-	-	-	-	-	3	1	1	1	1
CO2	2	1	1	-	1	1	-	-	1	-	2	1	1	1	1
CO3	1	1	1	1	1	-	-	-	-	-	1	1	1	1	2
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Omveer Singh*

*NK Jain*

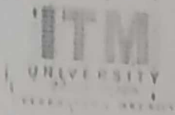
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OMVEER SINGH

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Location:  
Date: 2024-08-27 16:41:05:30

HOD  
School of Pharmacy  
ITM University  
Gwalior, Madhya Pradesh

*[Signature]*  
Dr. Omveer Singh  
REGISTRAR  
ITM University  
Gwalior (M.P.)



Syllabus-2023-2024

(SOP)(MPharm-Pharmaceuticals)

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*Jain*  
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Title of the Course	Good Manufacturing in Pharma
Course Code	MPH 1001ET

Part A									
Year	1st	Semester	1st	Credits	L	T	P	C	
					3	1	0	4	
Course Type	Theory only								
Course Category	Discipline Specific Elective								
Pre-Requisite/s	Co-Requisite/s								
Course Outcomes & Bloom's Level	CO1- Meaning and importance of GMP in the manufacturing and pharmaceutical industries (BL1-Remember) CO2- General and specific requirements for documentation and records (BL2-Understand) CO3- The role of Production, Quality Control (QC), Quality Assurance (QA) and the Qualified Person (QP) in GMP (BL3-Apply) CO4- To apply the GMP certification in industry (BL3-Apply) CO5- To learn the documentation and GMP SOPs (BL3-Apply)								
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment ✓	SDG (Goals)			SDG1 (No poverty) SDG3 (Good health and well-being) SDG4 (Quality education) SDG6 (Clean water and sanitation) SDG8 (Decent work and economic growth) SDG12 (Responsible consumption and production) SDG17 (Partnerships for the goals)				

Part B			
Modules	Contents	Pedagogy	Hours
UNIT 1	Introduction What is Good Manufacturing Practice? Why is GMP important? Official GMP Directives, the basic requirements of Good Manufacturing Practice., Pharmaceutical Quality System Principle and overview of the Pharmaceutical Quality System. Major updates. Development, content and implementation of PQS.	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8
UNIT 2	Personnel Key personnel, Background and duties of the Qualified person. Duties of the Head of production department. Duties of the Head of quality control. Person releasing the batch. Consultants. Personnel training and hygiene, Premises and Equipment Production area. Storage area. Quality control areas. Ancillary areas. Equipment.	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8
UNIT 3	Documentation Premises, Generation and control of documentation. Types of documents and specifications. Manufacturing formula and processing instructions. Packaging instructions. Procedures and records., Production General principles. Prevention of cross-contamination in production. Guidelines for starting materials. Processing operations. Packaging materials and operations. Guidelines for finished products.	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8
UNIT 4	Quality Control General principles. Main tasks of the Quality control department. Technical transfer of testing methods. Transfer protocol., Complaints and Recalls GMP Guidelines related to complaints. Classification of defects. Product Recalls.	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8

Part C

Modules	Title	Indicative-ABCA/PBL/ Experiments/Field work/ Internships	Bloom's Level	Hours
1	GMP	Seminar	BL3-Apply	8

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 Gwalior (M.P.)

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## Syllabus-2023-2024

(SOP)(MPharm-Pharmaceuticals)

Title of the Course		Introduction to intellectual property rights						
Course Code		MPH 208ET						
Part A								
Year	1st	Semester	2nd	Credits	L	T	P	C
					3	1	0	4
Course Type		Theory only						
Course Category		Skill Enhancement Courses						
Pre-Requisite/s		Co-Requisite/s						
Course Outcomes & Bloom's Level		CO1- To create awareness of IPR among pharmacy students. (BL2-Understand) CO2- To make the pharmacy students aware about the pharmaceutical R & D and the activities therein. (BL2-Understand) CO3- Develop the understanding of the Intellectual Property Rights necessary for research activities in the pharmaceutical industry. (BL3-Apply) CO4- To know the database of intellectual property and TKDL (BL2-Understand) CO5- To apply the Knowledge of IPR in drafting and filing of IPR (BL3-Apply)						
Courses Elements		Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values ✓ Environment X	SDG (Goals)	SDG1 (No poverty) SDG3 (Good health and well-being) SDG4 (Quality education) SDG6 (Clean water and sanitation) SDG8 (Decent work and economic growth) SDG17 (Partnerships for the goals)				

		Part B		Hours
Modules	Contents	Pedagogy		
UNIT 1	The pharmaceutical business and The pharmaceutical R & D	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board		10
UNIT 2	Module 3 – Intellectual Property Rights: Introduction about patents, copyright, trademark, Industrial Designs, Geographical Indications, Trade Secrets, Module 4 – IPR: With specific reference to pharma	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board		10
UNIT 3	IPR: Indian patent scenario and Patent commercialization and licensing	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board		10
UNIT 4	Patent drafting and Patent searches, patent filing, registration, granting World Intellectual Property Organization (WIPO), and its functions	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board		08
UNIT 5	IP in Traditional Knowledge, TKDL database in medicinal plants, INDIAN WEB-PORTALS FOR PATENTS AND TECHNOLOGIES	Lecture, based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board		07

Part C				
Modules	Title	Indicative-ABCA/PBL/ Experiments/Field work/ Internships	Bloom's Level	Hours
1	patent drafting and filing	Case Study	BL3-Apply	5

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