



UNIVERSITY  
Gwalior • MP • INDIA

"CELEBRATING DREAMS"

Date: 04-07-2022

**Minutes of Seventh Board of Studies Meeting of School of Pharmacy**  
**for Bachelor of Pharmacy Course**

The Seventh BoS meeting of School of Pharmacy, for Bachelor of Pharmacy was held on 04/07/2022 in the presence of committee members.

The following members were present:-

1. Prof. Balakumar Chandrasekaran – Chairman
2. Prof. Subodh kumar Dubey – Senior Member
3. Mr. Shivam Tayal - Member
4. Mr. Hero Khan Pathan - Member
5. Mr. Anurag Agrawal - Member
6. Mr. Nemi Kumar Jain - Member
7. Mr. Shailendra Narwariya - Member
8. Mrs. Divya Niranjani - Member
9. Mrs. Priyanka Keshri - Member
10. Prof. Sanjay K Jain, Department of Pharmaceutical Sciences, Dr. Harisingh Gour Vishwavidyalaya, Sagar – External Expert.

The Chairman-BoS welcomed Prof. S. K. Jain, an external expert and other members to the meeting and introduced agenda which were to be discussed.

**Agenda 1. "To discuss the implementation of online certification courses like SWAYAM-MOOC into the B. Pharm 6<sup>th</sup> to 8<sup>th</sup> semesters"**

This agenda was submitted to Prof. S. K. Jain sir and he suggested that students may get registered separately for this online certification course (it has 4 credit points). As such Pharmacy Council of India has not prescribed the online certification course in B Pharmacy Syllabus. Prof. Balakumar showed the current scheme of the School of Pharmacy-ITM University and explained that from 1<sup>st</sup> to 4<sup>th</sup> semesters consist of 'fine arts/music' and from 6<sup>th</sup> to 8<sup>th</sup> semesters consist of 'Online certification courses related to Pharmacy' as non-university exams with credit limit of 4. It was also mentioned in the scheme of ITM University that 'Not attaining any credits or failing in this course will not affect the award of Degree'.

Prof. S. K. Jain sir advised that in the final year, semesters 7 and 8, we can avoid the online certification courses. Third year B Pharm students (5<sup>th</sup> and 6<sup>th</sup> semesters) can register for the online course and must complete within the duration, provided that the time-line of MOOC courses or other online certification courses need to be taken care.

We updated the above points by removing the online certification courses in 7

  
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semesters of B Pharm syllabus. We have included online certification course in 3<sup>rd</sup> and 4<sup>th</sup> semesters of B Pharm as optional.

**Agenda 2. "To discuss the schemes and confirmation of examinations."**

Prof. S. K. Jain sir suggested to get confirmation from the examination authority/Controller of Examinations of ITM University and also to look for additional points from RGPV syllabus.

**Agenda 3. "To discuss the implementation of NCC courses with 24 credits including camp of 10 credits."**

As per the NAAC criteria, it was suggested to have NCC course for the students those who are interested in NCC activities. Hence, this agenda was opened for a discussion with Prof. S. K. Jain sir, external expert, he feels that 24 credit is heavy for the pharmacy students and students need to devote 360 hours within 3 years of duration i.e. 120 hrs/year which may create difficulties to pharmacy students. So, it is ideal to keep NCC course as an optional and if students are interested in NCC, then they may be allowed to join NCC course and complete their assigned credits. Thus, keeping NCC as a separate entity, other items such as fine arts, humanities, music and MOOC course or online certification course can be collected into one Basket

The Expert advised that a certificate course of NCC with 2 or 4 credits can be designed and included as a separate subject in consultation with NCC co-ordinator of ITM University and examination authority.

**Agenda 4. "To discuss Practice School or Industrial Training or both to be conducted in 7<sup>th</sup> semester of B. Pharm."**

In the PCI prescribed scheme, the paper 706PS - Practice School was mentioned, hence the following components such as industrial training, hospital training, community pharmacy centre can be incorporated.

**Agenda 5. "Inclusion of Elective subjects in 7<sup>th</sup> semester of B. Pharm."**

As per the recommendation of the Board of Studies (BoS) committee, the following elective papers are proposed for incorporation into 7<sup>th</sup> semester of B Pharm.


**BP707ET - Pharmaceutical Product Development:** to Focus on the processes involved in developing pharmaceutical products from conception to market.

**BP708ET - Introduction to Intellectual Property Rights:** Overview of intellectual property laws relevant to the pharmaceutical industry, including patents and copyrights.

**BP709ET - Artificial Intelligence in Pharmaceutical:** Exploration of AI applications in drug discovery, development, and marketing, emphasizing innovative technologies.

**BP710ET - Good Manufacturing Practice in Pharma:** Detailed study of the regulations and guidelines that ensure quality and safety in pharmaceutical manufacturing processes.

❖ Syllabus of these new courses and approved courses are attached in annexure I

  
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**Agenda 6. "Guidelines for Project work in B. Pharm 8<sup>th</sup> semester"**


As per the recommendation of BOS committee, the relevant guidelines mentioned in the PCI syllabus as adopted for project work BP813PW with certain amendments and inserted in the syllabus.


**Agenda 7. "Other relevant discussion"**

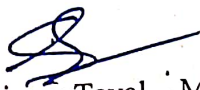
Committee was formed to review and recommend curriculum changes for the next academic year. As no other points were discussed, the meeting ended with a vote of thanks to external expert and members as well.

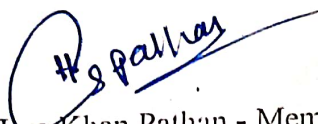
Members:-


  
Prof. Balakumar Chandrasekaran – Chairman

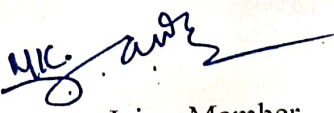
  
Prof. Sanjay K Jain External Expert

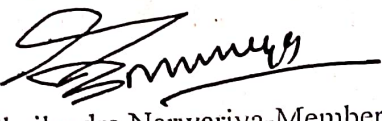
  
Prof. Subodh Kumar Dubey - Senior Member

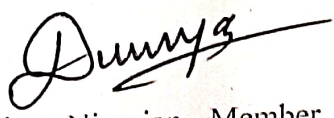
  
Mr. Shivam Tayal – Member

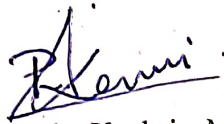
  
Mr. Hero Khan Pathan - Member

  
Mr. Anurag Agrawal – Member

  
Mr. Nem Kumar Jain - Member

  
Mr. Shailendra Narwariya-Member

  
Mrs. Divya Niranjana - Member

  
Mrs. Priyanka Keshri - Member

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## Syllabus-2022-2023

(SOP)(BPharm)

Title of the Course	Pharmaceutical Product Development
Course Code	BP707ET

### Part A

Year	Semester	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	<p>CO1- To recall the formulation development of different types of dosage forms(BL1-Remember)</p> <p>CO2- To outline the role of different pharmaceutical excipients in product development(BL2-Understand)</p> <p>CO3- To select the excipients for a specific drug product(BL5-Evaluate)</p> <p>CO4- To classify different of packaging for the drug product and materials used for primary and secondary packaging.(BL3-Apply)</p> <p>CO5- To choose optimization technique in the development of pharmaceutical drug product (BL4-Analyze)</p>					
Courses Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X 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)			

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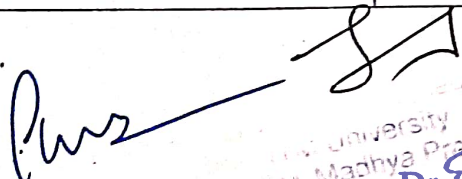
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**Part B**

Modules	Contents	Pedagogy	Hours
JNIT 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 i. Solvents and solubilizers ii. Cyclodextrins and their applications iii. Non - ionic surfactants and their applications iv. Polyethylene glycols and sorbitols v. Suspending and emulsifying agents vi. Semi solid excipients	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 i. Tablet and capsule excipients ii. Directly compressible vehicles iii. Coat materials iv. Excipients in parenteral and aerosols products v. Excipients for formulation of NDDS Selection and application of excipients in pharmaceutical formulations with specific industrial applications	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	BL5-Evaluate	5

  
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### 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

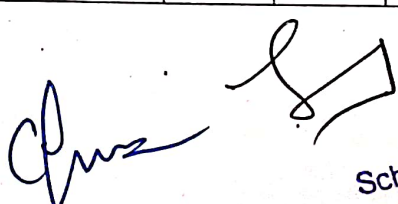
### Part E

<b>Books</b>	1. Pharmaceutical Statistics Practical and Clinical Applications by Stanford Bolton, Charles Bon; Marcel Dekker Inc. 2. Encyclopedia of Pharmaceutical Technology, edited by James Swarbrick, Third Edition, Informa Healthcare publishers. 3. Pharmaceutical Dosage Forms, Tablets, Volume II, edited by Herbert A. Lieberman and Leon Lachman; Marcel Dekker, Inc.
<b>Articles</b>	<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>
<b>References Books</b>	1. Aulton's Pharmaceutics – The Design and Manufacture of Medicines, Michael E. Aulton, 3rd Ed. 2. Remington – The Science and Practice of Pharmacy, 20th Ed. 3. Pharmaceutical Dosage Forms – Tablets Vol 1 to 3, A. Liberman, Leon Lachman and Joseph B. Schwartz
<b>MOOC Courses</b>	<a href="https://www.coursera.org/courses?query=pharmaceutical">https://www.coursera.org/courses?query=pharmaceutical</a>
<b>Videos</b>	<a href="https://www.youtube.com/watch?v=sesDthMPRC0&amp;list=PLkxD16eG21tVre8GBj-LbjfUUuq1qghVM">https://www.youtube.com/watch?v=sesDthMPRC0&amp;list=PLkxD16eG21tVre8GBj-LbjfUUuq1qghVM</a>

### Course Articulation Matrix

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

  
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## Syllabus-2022-2023

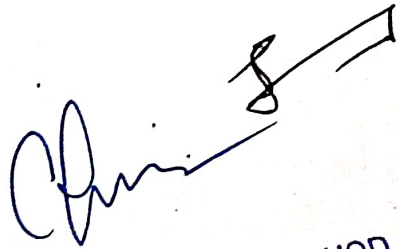
(SOP)(BPharm)

Title of the Course	Introduction to intellectual property rights
Course Code	BP708ET

### Part A

Year	Semester	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	<p>CO1- To create awareness of IPR among pharmacy students.(BL2-Understand)</p> <p>CO2- To make the pharmacy students aware about the pharmaceutical R &amp; D and the activities therein.(BL2-Understand)</p> <p>CO3- Develop the understanding of the Intellectual Property Rights necessary for research activities in the pharmaceutical industry.(BL3-Apply)</p> <p>CO4- To know the database of intellectual property and TKDL(BL2-Understand)</p> <p>CO5- To apply the Knowledge of IPR in drafting and filling of IPR(BL3-Apply)</p>					
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)			

  
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Part B			
Modules	Contents	Pedagogy	Hours
JNIT 1	The pharmaceutical business and The pharmaceutical R & D	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	10
JNIT 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

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

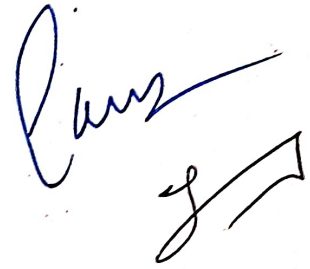
  
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### Course Articulation Matrix

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

  
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## Syllabus-2022-2023

### (SOP)(BPharm)

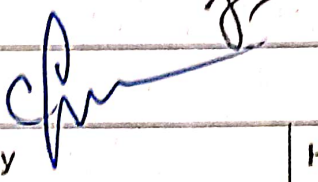
<b>Title of the Course</b>	Artificial intelligence in Pharmaceutical
<b>Course Code</b>	BP709LT

#### Part A

Year	Semester	Credits	L	T	P	C
			3	1	0	4
<b>Course Type</b>	Theory only					
<b>Course Category</b>	Skill Enhancement Courses					
<b>Pre-Requisite/s</b>			<b>Co-Requisite/s</b>			
<b>Course Outcomes &amp; Bloom's Level</b>	<p>CO1- Acquire an in-depth comprehension of AI applications in pharmaceutical domain. (BL2-Understand)</p> <p>CO2- Recognize and counter prevalent myths associated with AI. (BL2-Understand)</p> <p>CO3- Implement AI in real-life pharmaceutical use cases without the need for coding. (BL3-Apply)</p> <p>CO4- To gain the knowledge of AI and how to implement in healthcare (BL3-Apply)</p> <p>CO5- Ability to apply time-series forecasting for healthcare applications (BL3-Apply)</p>					
<b>Courses Elements</b>	Skill Development ✓ Entrepreneurship ✗ Employability ✓ Professional Ethics ✗ Gender ✗ Human Values ✗ Environment ✗	<b>SDG (Goals)</b>	SDG1 (No poverty) SDG3 (Good health and well-being) SDG4 (Quality education) SDG8 (Decent work and economic growth) SDG17 (Partnerships for the goals)			

#### Part B

Modules	Contents	Pedagogy	Hours
NIT 1	Introduction, Steps in AI, How Its Work Examples	Lecturo based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8
NIT 2	Applications of AI in Pharma Industry	Lecture based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	5
NIT 3	Predictive Analytics for Patient Outcomes, Treatment Plan	Lecturo based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8
NIT 4	Natural Language Processing, Chatbots	Lecturo based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	5
NIT 5	Using AI for Early Drug Discovery: From Small Molecules to Biologics	Lecturo based learning, interactive class, Peer tutorial, Class using ICT tool/PPT/white board	8

  
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Part C				
Modules	Title	Indicative-ABCA/PBL/ Experiments/Field work/ Internships	Bloom's Level	Hours
1	Remote Patient monitoring	Simulation	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

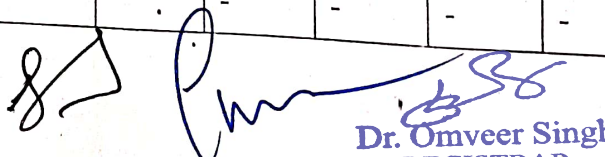
Practical					
Total Marks	Minimum Passing Marks	External Evaluation	Min. External Evaluation	Internal Evaluation	Min. Internal Evaluation

### Part E

<b>Books</b>	Harrer S, Menard J, Rivers M, Green DV, Karpiak J, Jeliaskov JR, Shapovalov MV, 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.
<b>Articles</b>	Patel J, Patel D, Meshram D. Artificial Intelligence in Pharma Industry-A Rising Concept. Journal of Advancement in Pharmacognosy. 2021;1(2).
<b>References Books</b>	Bhupathyaaj M, Rani KR, Essa MM, editors. Artificial Intelligence in Pharmaceutical Sciences. CRC Press; 2023 Nov 23.
<b>MOOC Courses</b>	Udemy, coursera, NEPTEL
<b>Videos</b>	YOU TUBE

### Course Articulation Matrix


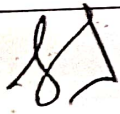
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PQ8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSC
CO1	1	3	-	3	3	-	-	-	-	-	3	-	2	1	2
CO2	1	1	1	2	2	-	-	-	-	-	3	-	1	1	2
CO3	1	3	-	1	3	-	-	-	-	-	3	-	1	1	2
CO4	1	2	1	1	2	-	-	-	-	-	3	-	1	1	1
CO5	-	1	1	1	2	-	-	-	-	-	2	-	1	-	1
CO6	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-

  
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## Syllabus-2022-2023

(SOP)(BPharm)

<b>Title of the Course</b>	Good Manufacturing in Pharma				
<b>Course Code</b>	BP710ET				
Part A					
<b>Year</b>		<b>Semester</b>		<b>Credits</b>	
				L	T
				3	1
				P	C
				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>	<p>CO1- Meaning and importance of GMP in the manufacturing and pharmaceutical industries. (BL1-Remember)</p> <p>CO2- General and specific requirements for documentation and records (BL2-Understand)</p> <p>CO3- The role of Production, Quality Control (QC), Quality Assurance (QA) and the Qualified Person (QP) in GMP (BL3-Apply)</p> <p>CO4- To apply the GMP certification in industry (BL3-Apply)</p> <p>CO5- To learn the documentation and GMP SOPs (BL3-Apply)</p>				
<b>Courses Elements</b>	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values ✓ Environment ✓	<b>SDG (Goals)</b>	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)		

  
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		Part B		
Modules	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	
JNIT4	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	2

  
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**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

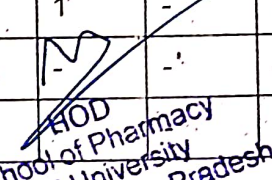
**Part E**

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

*Chandra*

**Course Articulation Matrix**

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

  
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