



## **Criteria 1- Curricular Aspects**

### **Key Indicator 1.2: Academic Flexibility**

**1.2.1** - Percentage of Programmes in which Choice Based Credit System (CBCS)/ elective course system has been implemented

**1.2.1.1.** Number of Programmes in which CBCS / Elective course system implemented

#### **DVV Query**

Kindly provide 1)List of programs in which CBCS/Elective course system implemented in the last completed academic year certified by the Registrar of the affiliating university. 2)Affiliating University letter stating implementation of CBCS. 3)Structure of the program clearly indicating courses, credits/ Electives as approved by the competent board.

#### **DVV Response**

The required documents are attached below.

## Index

Sr. No.	Contents	Page No.
1.	<a href="#"><u>List of Programmes in which choice based credit system or elective system has been implemented</u></a>	3
2.	<a href="#"><u>Minutes of relevant Academic Council/BOS meetings highlighting the relevant documents to this metric of the affiliating university.</u></a>	6-10
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	<b><u>M. Pharm</u></b>	
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3.	<a href="#"><u>Affiliating University letter stating implementation of CBCS.</u></a> B. Pharm M.Pharm PhD	6-10
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## List of Programmes in which choice- based credit system or elective system has been implemented

Pu/218/ Propagating Letter (Propag)

### University of Mumbai



College Affiliations &  
Development Department

Aff/ICD/2021-22/1883

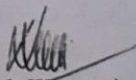
21<sup>st</sup> January, 2022

### WHOMSOEVER IT MAY CONCERN

This is to certify that Vivekanand Education Society's College of Pharmacy Shri Hashu Advani Memorial Complex, Behind Collector's Colony, Chembur, Mumbai- 400 074 is affiliated to the University of Mumbai since 2007-08 the following programs are conducted in the said College.

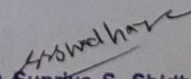
Sr. No	Programs	Affiliation (Permanent/ Temporary)	Validity Period
1	Bachelor of Pharmacy (B. Pharm)	Permanent	From 2007-08 to 2021-22

This Certificate is issued on the request of the Principal of the said College for submitting the same to the NAAC, Bangalore, accordingly.

  
(Deepak Wasave)  
Deputy Registrar

College Affiliations & Development Department



  
Dr. (Mrs.) Supriya S. Shidhaye  
PRINCIPAL  
Vivekanand Education Society's  
College of Pharmacy  
HAMC, Behind Collector Colony,  
Chembur, Mumbai - 400 074.

# University of Mumbai



No. Th/ICD/2021-22/ 3873

25<sup>th</sup> January, 2022.

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Vivekanand Education Society's College of Pharmacy, Chembur, Mumbai – 400 074**, affiliated to University of Mumbai is following the syllabus as prescribed by University of Mumbai, for the following programmes,

### **Programme Details: Academic Year 2020-21**

Sr. No.	Programme Name	Recognition	Academic Year of Recognition
1	Master of Pharmacy in Pharmaceutics	Temporary	2011-12 to 2021-22
2	Master of Pharmacy in Quality Assurance	Temporary	2012-13 to 2021-22
3	Master of Pharmacy in Pharmaceutical Chemistry	Temporary	2013-14 to 2021-22
4	Ph.D. in Pharmaceutics	Temporary	2014-15 to 2021-22
5	Ph.D. in Pharmaceutical Chemistry	Temporary	2018-19 to 2021-22

This certificate is issued on the request made by the Principal for presenting the same before the NAAC AQAR authorities.

*M. S. D. S.*

Deputy Registrar  
(Research Administration & Promotion Cell)



*Supriya S. Shidhaye*  
Dr. (Mrs.) Supriya S. Shidhaye  
PRINCIPAL  
Vivekanand Education Society's  
College of Pharmacy  
HAMC, Behind Collector Colony,  
Chembur, Mumbai - 400 074.





# Vivekanand Education Society's College of Pharmacy

(Sindhi Linguistic Minority, Approved by AICTE, DTE, Pharmacy Council of India & Govt. of Maharashtra, Affiliated to University of Mumbai)  
B. Pharm. Programme is accredited by NBA, New Delhi from 2016-17 to 2021-22  
Recognition under section 2(F) & 12(B) of the UGC Act, 1956

**Prof. Supriya Shidhaye**  
M. Pharm., Ph.D. (Tech.)  
Principal

## Programme Details: Academic Year 2020-21

Sr. No.	Programme Name	Year of Commencement	Programme code
1	Bachelor of Pharmacy	2007-08	BP
2	Master of Pharmacy in Pharmaceutics	2011-12	MPH
3	Master of Pharmacy in Quality Assurance	2012-13	MQA
4	Master of Pharmacy in Pharmaceutical Chemistry	2013-14	MPC
5	PhD in Pharmaceutics	2014-15	PPH
6	PhD in Pharmaceutical Chemistry	2018-19	PPC



*Supriya S. Shidhaye*  
Dr. (Mrs.) Supriya S. Shidhaye  
PRINCIPAL  
Vivekanand Education Society's  
College of Pharmacy  
HAMC, Behind Collector Colony,  
Chembur, Mumbai - 400 074.

Hashu Advani Memorial Complex, Behind Collectors Colony, Chembur, Mumbai - 400 074. INDIA. | Tel.: +91 22 6114 4144  
Fax : +91 22 2554 3925 | Email : vespharm@yahoo.co.in / vescop@gmail.com • Website : ves.ac.in / Pharmacy

1. Minutes of relevant Academic Council/BOS meetings highlighting the relevant documents to this metric of the affiliating university Affiliating
2. University letter stating implementation of CBCS

## B. Pharm

University of Mumbai



No. UG/67 of 2019-20

**CIRCULAR:-**

Attention of the Principals of the Affiliated Colleges, Directors of the recognized Institutions in Science & Technology Faculty is invited to this office Circular No. UG/193 of 2016-17, dated 3<sup>rd</sup> December, 2016 relating to the Credit System Manual revised syllabus for B. Pharm. & M. Pharm. (Sem. I to IV).

They are hereby informed that the recommendations made by the Ad-hoc Board of Studies in Pharmacy at its meeting held on 14<sup>th</sup> June, 2019 have been accepted by the Academic Council at its meeting held on 26<sup>th</sup> July, 2019 vide item No. 4.39 and that in accordance therewith, the Manual and Revised Scheme and Syllabus as per the (CBCS) for the Bachelor of Pharmacy (Sem. I to VIII) has been brought into force with effect from the academic year 2019-20, accordingly. (The same is available on the University's website [www.mu.ac.in](http://www.mu.ac.in)).

MUMBAI - 400 032  
14<sup>th</sup> August, 2019  
To

(Dr. Ajay Deshmukh)  
REGISTRAR

The Principals of the affiliated Colleges, and Directors of the recognized Institutions in Science & Technology Faculty. (Circular No. UG/334 of 2017-18 dated 9<sup>th</sup> January, 2018.)

A.C/4.39/26/07/2019

\*\*\*\*\*

No. UG/67 -A of 2019-20

MUMBAI-400 032

14<sup>th</sup> August, 2019

Copy forwarded with Compliments for information to:-

- 1) The I/c Dean, Faculty of Science & Technology,
- 2) The Chairman, Board of Studies in Pharmacy,
- 3) The Director, Board of Examinations and Evaluation,
- 4) The Director, Board of Students Development,
- 5) The Co-ordinator, University Computerization Centre.

(Dr. Ajay Deshmukh)  
REGISTRAR

*Supriya S. Shidhaye*  
Dr. (Mrs.) Supriya S. Shidhaye  
PRINCIPAL  
Vivekanand Education Society's  
College of Pharmacy  
HAMC, Behind Collector Colony,  
Chembur, Mumbai - 400 074.



Cover Page

AC 26/07/2019  
Item No. 4.39

# UNIVERSITY OF MUMBAI



## Syllabus for Approval

Sr. No.	Heading	Particulars
1	Title of the Course	Bachelor of Pharmacy (B Pharm.)
2	Eligibility for Admission	H.S.C / CET
3	Passing Marks	50%
4	Ordinances / Regulations ( if any)	
5	No. of Years / Semesters	4 (Four) Years / 8 (Eight) Semesters
6	Level	<del>P.G. / U.G. / Diploma / Certificate</del> (Strike out which is not applicable)
7	Pattern	<del>Yearly / Semester</del> (Strike out which is not applicable)
8	Status	<del>New / Revised</del> (Strike out which is not applicable)
9	To be implemented from Academic Year	From Academic Year 2019-20

Date: 9/7/19

Signature :

Name of BOS Chairperson / Dean :

9/7/19

KRISHNA 1702 P.D.

*[Signature]*

Dr. (Mrs.) Supriya S. Shidhaye  
PRINCIPAL

Vivekanand Education Society's  
College of Pharmacy  
HAMC, Behind Collector Colony,  
Chembur, Mumbai - 400 074.





## M. Pharm

Revised syllabus as per  
received mail dt. 17.2.2020  
University of Mumbai



No. UG/68 of 2019-20

### CIRCULAR:-

Attention of the Principals of the Affiliated Colleges, Directors of the recognized Institutions in Science & Technology Faculty is invited to this office Circular No. UG/193 of 2016-17, dated 3<sup>rd</sup> December, 2016 relating to the Credit System Manual revised syllabus for B. Pharm. & M. Pharm. (Sem. I to IV).

They are hereby informed that the recommendations made by the Ad-hoc Board of Studies in Pharmacy at its meeting held on 14<sup>th</sup> June, 2019 have been accepted by the Academic Council at its meeting held on 26<sup>th</sup> July, 2019 vide item No. 4.38 and that in accordance therewith, the Manual and Revised Scheme and Syllabus as per the (CBCS) for the Master of Pharmacy (Sem. I to IV) has been brought into force with effect from the academic year 2019-20, accordingly. (The same is available on the University's website [www.mu.ac.in](http://www.mu.ac.in)).

MUMBAI - 400 032  
14<sup>th</sup> August, 2019  
To

(Dr. Ajay Deshmukh)  
REGISTRAR

The Principals of the affiliated Colleges, and Directors of the recognized Institutions in Science & Technology Faculty. (Circular No. UG/334 of 2017-18 dated 9<sup>th</sup> January, 2018.)

A.C/4.38/26/07/2019

\*\*\*\*\*

No. UG/68 -A of 2019-20

MUMBAI-400 032

14<sup>th</sup> August, 2019

Copy forwarded with Compliments for information to:-

- 1) The I/c Dean, Faculty of Science & Technology.
- 2) The Chairman, Board of Studies in Pharmacy.
- 3) The Director, Board of Examinations and Evaluation.
- 4) The Director, Board of Students Development.
- 5) The Co-ordinator, University Computerization Centre.

(Dr. Ajay Deshmukh)  
REGISTRAR



Dr. (Mrs.) Supriya S. Shidhaye  
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Chembur, Mumbai - 400 074.



Cover Page

AC 26/07/2019  
Item No. 4.38

# UNIVERSITY OF MUMBAI



## Syllabus for Approval

Sr. No.	Heading	Particulars
1	Title of the Course	Master of Pharmacy (M-Pharm.)
2	Eligibility for Admission	B-Pharm / BPT
3	Passing Marks	50%
4	Ordinances / Regulations (if any)	
5	No. of Years / Semesters	2 (two) years / 4 (four) semesters
6	Level	P.G. / <del>U.G.</del> Diploma / Certificate (Strike out which is not applicable)
7	Pattern	<del>Yearly</del> / Semester (Strike out which is not applicable)
8	Status	<del>New</del> / Revised (Strike out which is not applicable)
9	To be implemented from Academic Year	From Academic Year 2019-20

Date: 1/7/19

Signature: [Signature]

Name of BOS Chairperson / Dean: KRISHNAJI PH.D



Dr. (Mrs.) Sushrta S. Shidhaye  
Principal  
Vivekanand Education Society's  
College of Pharmacy  
HAMC, Behind Collector Colony,  
Chembur, Mumbai - 400 074.



**UNIVERSITY OF MUMBAI**  
**ACADEMIC YEAR (2020 – 2021)**

Sr. No.	Heading / Contents	Particulars
1.	Title of the Course	Ph.D.(Tech ) Course work in Pharmaceutical Sciences
2.	Eligibility for Admission	As per University of Mumbai circular No. Exam./Thesis/Univ./VCD/947 of 2018 and/ or guidelines/ordinances published from time to time
3.	Duration of Ph.D.(Tech.) in Pharmaceutical Sciences Programme	University of Mumbai circular No. Exam./Thesis/Univ./VCD/947 of 2018 and/ or guidelines/ordinances published from time to time
4.	Passing Marks in Course Work	As per University of Mumbai circular No. Exam./Thesis/Univ./VCD/947 of 2018 and/ or guidelines/ordinances published from time to time
5.	Course work (No. of Years/ Semesters)	2 Semesters
6.	Levels	P.G.
7.	Pattern	Semester
8.	Status	Revised
9.	To be Implemented	From Academic Year 2020-2021

Name of BOS Chairman: DrSupriyaShidhaye / **Dean: Dr. AnuradhaMajumdar**



Dr. (Mrs.) Supriya S. Shidhaye  
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UNIVERSITY OF MUMBAI



**Revised Syllabus for Ph.D.(Tech)Course Work in Pharmaceutical Sciences  
Programs**

**Course Code: Ph.D.C.**

With effect from the academic year 2020–2021

VCD No: Exam/thesis/Univ/VCD/947 of 2018 dated 15th June 2018



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- ✚ Ph.D Tech. student has to obtain a minimum of 55% of marks or its equivalent grade in the UGC 7 point scale (or an equivalent grade/CGPA in a point scale wherever grading system is followed) in the course work in order to be eligible to submit the synopsis of dissertation/ Thesis and submit the dissertation/thesis.

**Course Work Structure for Ph.D. (Tech). Program in Pharmaceutical sciences under Faculty of Science and Technology, University of Mumbai (With effect from Academic Year 2020-21)**

CODE	NAME OF COURSE	CONTACT HOURS/WEEK	CREDITS	MIDTERM TEST	END SEMESTER EXAM	TOTAL
Ph.D. C101	Research Methodology	04	04	20	80	100
Ph.D. C102	Biostatistics	02	02	10	40	50
Ph.D. C103	Advance course suggested by the guide from the syllabus of university of Mumbai for M Pharm program	As per syllabus 04	04	20	80	100
Ph.D. C104	Coursework like project work suggested by Guide or Course from SWAYAM Platform	02	02	10	40	50
Ph.D. C105	Research and Publication Ethics or same course from Swayam platform for supplementary or for credit transfer	02	02	10	40	50
<b>Total</b>		<b>14</b>	<b>14</b>	<b>70</b>	<b>280</b>	<b>350</b>

**4. Syllabus for the Course Work Subjects:**

Course Code	Course Name	Credits
<b>Ph.DC101</b>	<b>Research Methodology</b>	<b>04</b>




Dr. (Mrs.) <sup>HS</sup>Supriya S. Shidhaye  
PRINCIPAL  
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College of Pharmacy  
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Structures of programmes clearly indicating courses/credits  
Electives as approved by competent Board

# UNIVERSITY OF MUMBAI



Manual on  
**CHOICE BASED CREDIT SYSTEM**  
for  
**Undergraduate Programme**  
**(Bachelor of Pharmacy, B. Pharm.)**  
in  
**PHARMACY**  
Revised Course (Revised 2019)  
from the academic year 2019-2020

  
Dr. (Mrs.) Supriya S. Shidhaye  
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Chembur, Mumbai - 400 074.



### COURSE OF STUDY

The course of study for B. Pharm shall include Semester Wise Theory & Practical as given in Table – I to VIII. The number of hours to be devoted to each theory, tutorial and practical course in any semester shall not be less than that shown in Table – I to VIII.

**Table-I: Course of study for semester I**

Course code	Name of the course	No.of hours	Tutorial	Credit points
BP101T	Human Anatomy and Physiology I– Theory	3	1	4
BP102T	Pharmaceutical Analysis I – Theory	3	1	4
BP103T	Pharmaceutics I – Theory	3	1	4
BP104T	Pharmaceutical Inorganic Chemistry – Theory	3	1	4
BP105T	Communication skills – Theory *	2	-	2
BP106RBT BP106RMT	Remedial Biology/ Remedial Mathematics – Theory*	2	-	2
BP107P	Human Anatomy and Physiology – Practical	4	-	2
BP108P	Pharmaceutical Analysis I – Practical	4	-	2
BP109P	Pharmaceutics I – Practical	4	-	2
BP110P	Pharmaceutical Inorganic Chemistry – Practical	4	-	2
BP111P	Communication skills – Practical*	2	-	1
BP112RBP	Remedial Biology – Practical*	2	-	1
<b>Total</b>		<b>32/34<sup>S</sup>/36<sup>#</sup></b>	<b>4</b>	<b>27/29<sup>S</sup>/30<sup>#</sup></b>

\*Applicable ONLY for the students who have studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB)course.

<sup>S</sup>Applicable ONLY for the students who have studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics (RM)course.

\* Non University Examination (NUE)


  
**Dr. (Mrs.) Supriya S. Shidhaye**  
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**Vivekanand Education Society's**  
**College of Pharmacy**  
**HAMC, Behind Collector Colony,**  
**Chembur, Mumbai - 400 074.**





Table-II: Course of study for semester II

Course Code	Name of the course	No.of hours	Tutorial	Credit points
BP201T	Human Anatomy and Physiology II – Theory	3	1	4
BP202T	Pharmaceutical Organic Chemistry I – Theory	3	1	4
BP203T	Biochemistry – Theory	3	1	4
BP204T	Pathophysiology – Theory	3	1	4
BP205T	Computer Applications in Pharmacy – Theory *	3	-	3
BP206T	Environmental sciences – Theory *	3	-	3
BP207P	Human Anatomy and Physiology II –Practical	4	-	2
BP208P	Pharmaceutical Organic Chemistry I– Practical	4	-	2
BP209P	Biochemistry – Practical	4	-	2
BP210P	Computer Applications in Pharmacy – Practical*	2	-	1
<b>Total</b>		<b>32</b>	<b>4</b>	<b>29</b>

\*Non University Examination (NUE)

Table-III: Course of study for semester III

Course code	Name of the course	No.of hours	Tutorial	Credit points
BP301T	Pharmaceutical Organic Chemistry II – Theory	3	1	4
BP302T	Physical Pharmaceutics I – Theory	3	1	4
BP303T	Pharmaceutical Microbiology – Theory	3	1	4
BP304T	Pharmaceutical Engineering – Theory	3	1	4
BP305P	Pharmaceutical Organic Chemistry II – Practical	4	-	2
BP306P	Physical Pharmaceutics I – Practical	4	-	2
BP307P	Pharmaceutical Microbiology – Practical	4	-	2
BP 308P	Pharmaceutical Engineering –Practical	4	-	2
<b>Total</b>		<b>28</b>	<b>4</b>	<b>24</b>



Dr. (Mrs.) Supriya S. Shidhaye  
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Table-IV: Course of study for semester IV

Course code	Name of the course	No.of hours	Tutorial	Credit points
BP401T	Pharmaceutical Organic Chemistry III– Theory	3	1	4
BP402T	Medicinal Chemistry I – Theory	3	1	4
BP403T	Physical Pharmaceutics II – Theory	3	1	4
BP404T	Pharmacology I – Theory	3	1	4
BP405T	Pharmacognosy and Phytochemistry I– Theory	3	1	4
BP406P	Medicinal Chemistry I – Practical	4	-	2
BP407P	Physical Pharmaceutics II – Practical	4	-	2
BP408P	Pharmacology I – Practical	4	-	2
BP409P	Pharmacognosy and Phytochemistry I – Practical	4	-	2
Total		31	5	28

Table-V: Course of study for semester V

Course code	Name of the course	No.of hours	Tutorial	Credit points
BP501T	Medicinal Chemistry II – Theory	3	1	4
BP502T	Industrial PharmacyI– Theory	3	1	4
BP503T	Pharmacology II – Theory	3	1	4
BP504T	Pharmacognosy and Phytochemistry II– Theory	3	1	4
BP505T	Pharmaceutical Jurisprudence – Theory	3	1	4
BP506P	Industrial PharmacyI – Practical	4	-	2
BP507P	Pharmacology II – Practical	4	-	2
BP508P	Pharmacognosy and Phytochemistry II – Practical	4	-	2
Total		27	5	26

Dr. (Mrs.)  Sushila S. Shidhaye

PRINCIPAL

Vivekanand Education Society's

College of Pharmacy

HAMC, Behind Collector Colony,  
Chembur, Mumbai - 400 074.



Table-VI: Course of study for semester VI

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

Table-VII: Course of study for semester VII

Course code	Name of the course	No.of hours	Tutorial	Credit points
BP701T	Instrumental Methods of Analysis – Theory	3	1	4
BP702T	Industrial PharmacyII – Theory	3	1	4
BP703T	Pharmacy Practice – Theory	3	1	4
BP704T	Novel Drug Delivery System – Theory	3	1	4
BP705P	Instrumental Methods of Analysis –Practical	4	-	2
BP706PS	Practice School*	12	-	6
<b>Total</b>		<b>28</b>	<b>5</b>	<b>24</b>

\* Non University Examination (NUE)



Dr. (Mrs.) Supriya S. Shidhaye  
PRINCIPAL  
Vivekanand Education Society's  
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HAMC, Behind Collector Colony,  
Chembur, Mumbai - 400 074.





Table-VIII: Course of study for semester VIII

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP801T	Biostatistics and Research Methodology	3	1	4
BP802T	Social and Preventive Pharmacy	3	1	4
BP803ET	Pharma Marketing Management	3 + 3 = 6	1 + 1 = 2	4 + 4 = 8
BP804ET	Pharmaceutical Regulatory Science			
BP805ET	Pharmacovigilance			
BP806ET	Quality Control and Standardization of Herbs			
BP807ET	Computer Aided Drug Design			
BP808ET	Cell and Molecular Biology			
BP809ET	Cosmetic Science			
BP810ET	Experimental Pharmacology			
BP811ET	Advanced Instrumentation Techniques			
BP812ET	Dietary Supplements And Nutraceuticals - Theory			
BP813ET	Pharmaceutical Product Development - Theory			
BP814PW	Project Work	12	-	6
Total		24	4	22

Table-IX: Semester wise credits distribution

Semester	Credit Points
I	27/29 <sup>§</sup> /30 <sup>#</sup>
II	29
III	26
IV	28
V	26
VI	26
VII	24
VIII	22
Extracurricular/ Co curricular activities	01*
<b>Total credit points for the program</b>	<b>209/211<sup>§</sup>/212<sup>#</sup></b>

\* The credit points assigned for extracurricular and or co-curricular activities shall be given by the Principals of the colleges and the same shall be submitted to the University. The criteria to acquire this credit point shall be defined by the colleges from time to time.

<sup>§</sup>Applicable ONLY for the students studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics course.

Dr. (Mrs.) Supriya S. Shidhaye  
PRINCIPAL  
Vivekanand Education Society's  
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#Applicable ONLY for the students studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology course.



**UNIVERSITY OF MUMBAI**  
No. UG/213 of 2016-17

**CIRCULAR:-**

A reference is invited to the Syllabi relating to the Ph. D. Course Work vide this office Circular No.UG/121 of 2015-16, dated 24<sup>th</sup> November, 2015 and the Directors/Heads of the University Departments, Dean/Principals of the affiliated Colleges in Faculty of Technology and Engineering, Pharmacy, Architecture and MCA. are hereby informed that proposal received from Co-ordinator Faculty of Technology, approved by the Academic Council at its meeting held on 30<sup>th</sup> September, 2016 vide item No. 4.17 and in accordance therewith, the revised syllabus as per the Choice Based Credit System of Ph. D. Course Work for Engineering Faculty, which is available on the University's web site (www.mu.ac.in) and that the same has been brought into force with effect from the academic year 2017-2018.

MUMBAI - 400 032  
4<sup>th</sup> January, 2017

(Dr.M.A.Khan)  
REGISTRAR

To,

The Directors/Heads of the University Departments, Dean/Principals of the affiliated colleges in Faculty of Technology and Engineering, Pharmacy, Architecture and MCA.

A.C/4.17/30.09.2016

\*\*\*\*\*

No. UG/213-A of 2016-17

MUMBAI-400 032

4<sup>th</sup> January, 2017

Copy forwarded with Compliments for information to:-

- 1) The Co-ordinator, faculties of Technology and Engineering.
- 2) The Chairman & Chairperson of the board of Studies & Ad-Hoc Board of Studies of various subject at faculty of Technology and Engineering, Pharmacy, Architecture and MCA.
- 3) The Director, Board of College and University Development.
- 4) The Co-Ordinator, University Computerization Centre,
- 5) The Controller of Examinations.

(Dr.M.A.Khan)  
REGISTRAR

PTO.,

Dr. (Mrs.) Supriya S. Shidhaye  
PRINCIPAL  
Vivekanand Education Society's  
College of Pharmacy  
HAMC, Behind Collector Colony,  
Chembur, Mumbai - 400 074.





**Course Work Structure for Phd Program in Faculty of Technology  
Mumbai University**

(With effect from Academic Year 2017-18)

CODE	NAME OF COURSE	CONTACT HOURS	CREDITS	EXAMINATION SCHEME				
				MID TERM TEST	END SEMES TER EXAM	TERM WORK	SEMINAR PRESENTATION	TOTAL
Phd101	Research Methodology	6	6	20	80	--	--	100
Phd102	Course suggested by Guide*	6	6	20	80	--	--	100
Phd103	Seminar	-	4	-	-	50	50	100
Total		12	16	40	160	50	50	300

**Grading of Research Candidates Performance**

Awarding of grade to research candidates based on their performance shall be done as per the applicable ordinances and regulations for undergraduate and Post graduate programs of Engineering under the Faculty of Technology. Semester Grade Point Index (SGPI) shall be also calculated based on the ordinances and regulations applicable for engineering programs under Faculty of Technology. Approved and recognized Research Centers shall prepare Phd course work grade card after successful completion of course work and issue to candidates and one copy to University concerned section for record.

*Ms. Welhare*  
**Dr. (Mrs.) Sapriya S. Shidhaye**  
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 Chembur, Mumbai - 400 074.



AC 31/05/2017

Item Number 4.2

**UNIVERSITY OF MUMBAI**



**Bachelor of Pharmacy**

**First Year B. Pharm. ( Semester I,II,III & IV),**

**Revised course (REV- 2016)**

**from Academic Year 2016 -17**

(As per **Choice Based Credit and Grading System** with  
effect from the academic year 2016–2017)

Dr. (Mrs.) <sup>S/S</sup>Supriya S. Shidhaye  
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**B. Pharm. Choice Based Credit and Grading System (CBCGS)[2016-17]**

**Scheme Examination Semesters I to VIII**

**&**

**Syllabus Semesters I to IV**

**[REVISED 2016]**

  
**Dr. (Mrs.) Sudhaya S. Shidhaye**

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**Chembur, Mumbai - 400 074.**





**EXAMINATION SCHEME FOR THE CHOICE BASED CREDIT AND GRADING SYSTEM  
(CBCGS) (2016-17)**

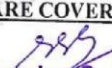
**SEMESTER I**

Course Code	Name	Credits	Hr/Wk	Weightage Internal	Weightage End Semester Exam	Total Marks
BPH_C_101_T	General Chemistry	4	4	20	80	100
BPH_C_102_T	Dispensing and Community Pharmacy	4	4	20	80	100
BPH_C_103_T	Anatomy, Physiology & Pathophysiology I	4	4	20	80	100
BPH_C_104_T	Biochemistry I	4	4	20	80	100
BPH_C_105_T	Communication Skills and Ethics (NUES)	3	3	20	80	100
	<b>TOTAL Theory</b>	<b>19</b>	<b>19</b>	<b>100</b>	<b>400</b>	<b>500</b>
BPH_C_106_L	General Chemistry Lab	2	4	10	40	50
BPH_C_107_L	Dispensing and Community Pharmacy Lab	2	4	10	40	50
BPH_C_108_L	Anatomy, Physiology & Pathophysiology Lab	2	4	10	40	50
	<b>TOTAL Lab</b>	<b>6</b>	<b>12</b>	<b>30</b>	<b>120</b>	<b>150</b>
	<b>TOTAL SEM I</b>	<b>25</b>	<b>31</b>	<b>130</b>	<b>520</b>	<b>650</b>

**SEMESTER II**

Course Code	Name	Credits	Hr/Wk	Weightage Internal	Weightage End Semester Exam	Total Marks
BPH_C_201_T	Anatomy, Physiology & Pathophysiology II	4	4	20	80	100
BPH_C_202_T	Biochemistry II	4	4	20	80	100
BPH_C_203_T	Pharmacognosy I	4	4	20	80	100
BPH_C_204_T	Hospital Pharmacy and Drug Store Management	4	4	20	80	100
BPH_C_205_T	Environmental Science	3	3	20	80	100
	<b>TOTAL Theory</b>	<b>19</b>	<b>19</b>	<b>100</b>	<b>400</b>	<b>500</b>
BPH_C_206_L	Pharmacognosy Lab I	2	4	10	40	50
BPH_C_207_L	Biochemistry Lab	2	4	10	40	50
BPH_C_208_L	Computer Lab	2	4	10	40	50
	<b>TOTAL Lab</b>	<b>6</b>	<b>12</b>	<b>30</b>	<b>120</b>	<b>150</b>
	<b>TOTAL SEM II</b>	<b>25</b>	<b>31</b>	<b>130</b>	<b>520</b>	<b>650</b>

**NO REMEDIAL FOR LATERAL ENTRY AS SEM I AND II SUBJECTS ARE COVERED IN DIPLOMA SYLLABUS**

  
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### SEMESTER III

Course Code	Name	Credits	Hr/Wk	Weightage Internal	Weightage End Semester Exam	Total Marks
BPH_C_301_T	Organic Chemistry I	4	4	20	80	100
BPH_C_302_T	Physical Pharmacy I	4	4	20	80	100
BPH_C_303_T	Anatomy, Physiology & Pathophysiology III	4	4	20	80	100
BPH_C_304_T	Pharmaceutical Analysis I	3	3	20	80	100
BPH_C_305_T	Pharmaceutical Engineering	3	3	20	80	100
	<b>TOTAL Theory</b>	<b>18</b>	<b>18</b>	<b>100</b>	<b>400</b>	<b>500</b>
BPH_C_306_L	Organic Chemistry Lab I	2	4	10	40	50
BPH_C_307_L	Physical Pharmacy Lab I	2	4	10	40	50
BPH_C_308_L	Pharmaceutical Analysis Lab I	2	4	10	40	50
	<b>TOTAL Lab</b>	<b>6</b>	<b>12</b>	<b>30</b>	<b>120</b>	<b>150</b>
	<b>TOTAL SEM III</b>	<b>24</b>	<b>30</b>	<b>130</b>	<b>520</b>	<b>650</b>

### SEMESTER IV

Course Code	Name	Credits	Hr/Wk	Weightage Internal	Weightage End Semester Exam	Total Marks
BPH_C_401_T	Organic Chemistry II	4	4	20	80	100
BPH_C_402_T	Physical Pharmacy II	4	4	20	80	100
BPH_C_403_T	Pharmaceutics I	3	3	20	80	100
BPH_C_404_T	Pharmacology I	4	4	20	80	100
BPH_C_405_T	Microbiology	3	3	20	80	100
BPH_C_406_T	Mathematics and Statistics	3	3	20	80	100
	<b>TOTAL Theory</b>	<b>21</b>	<b>21</b>	<b>120</b>	<b>480</b>	<b>600</b>
BPH_C_407_L	Physical Pharmacy Lab II	2	4	10	40	50
BPH_C_408_L	Pharmaceutics Lab I	2	4	10	40	50
BPH_C_409_L	Pharmacology Lab I	2	4	10	40	50
	<b>TOTAL Lab</b>	<b>6</b>	<b>12</b>	<b>30</b>	<b>120</b>	<b>150</b>
	<b>TOTAL SEM IV</b>	<b>27</b>	<b>33</b>	<b>150</b>	<b>600</b>	<b>750</b>

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**SEMESTER V**

Course Code	Name	Credits	Hr/Wk	Weightage Internal	Weightage End Semester Exam	Total Marks
BPH_C_501_T	Organic Chemistry III	4	4	20	80	100
BPH_C_502_T	Pharmaceutics II	4	4	20	80	100
BPH_C_503_T	Pharmaceutical Biotechnology	4	4	20	80	100
BPH_C_504_T	Pharmacology II	4	4	20	80	100
BPH_E_5xx_T	Choice Based Course I	2	2	10	40	50
BPH_E_5xx_T	Choice Based Course II	2	2	10	40	50
	<b>TOTAL Theory</b>	<b>20</b>	<b>20</b>	<b>100</b>	<b>400</b>	<b>500</b>
BPH_C_505_L	Organic Chemistry Lab II	2	4	10	40	50
BPH_C_506_L	Pharmaceutics Lab II	2	4	10	40	50
BPH_C_507_L	Experimental Techniques in Microbiology and Biotechnology Lab	2	4	10	40	50
	<b>TOTAL Lab</b>	<b>6</b>	<b>12</b>	<b>30</b>	<b>120</b>	<b>150</b>
	<b>TOTAL SEM V</b>	<b>26</b>	<b>32</b>	<b>130</b>	<b>520</b>	<b>650</b>

**SEMESTER VI**

Course Code	Name	Credits	Hr/Wk	Weightage Internal	Weightage End Semester Exam	Total Marks
BPH_C_601_T	Pharmaceutical Chemistry I	4	4	20	80	100
BPH_C_602_T	Pharmaceutics III	4	4	20	80	100
BPH_C_603_T	Pharmaceutical Analysis II	4	4	20	80	100
BPH_C_604_T	Pharmacognosy II	4	4	20	80	100
BPH_E_6xx_T	Choice Based Course III	4	4	20	80	100
BPH_E_6xx_T	Choice Based Course IV	2	2	10	40	50
	<b>TOTAL Theory</b>	<b>22</b>	<b>22</b>	<b>110</b>	<b>440</b>	<b>550</b>
BPH_C_605_L	Pharmaceutical Chemistry Lab I	2	4	10	40	50
BPH_C_606_L	Pharmaceutics Lab III	2	4	10	40	50
BPH_C_607_L	Pharmaceutical Analysis Lab II	2	4	10	40	50
	<b>TOTAL Lab</b>	<b>6</b>	<b>12</b>	<b>30</b>	<b>120</b>	<b>150</b>
	<b>TOTAL SEM VI</b>	<b>28</b>	<b>34</b>	<b>140</b>	<b>560</b>	<b>700</b>

  
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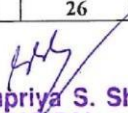


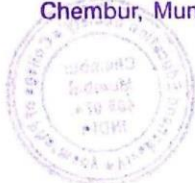
SEMESTER VII

Course Code	Name	Credits	Hr/Wk	Weightage Internal	Weightage End Semester Exam	Total Marks
BPH_C_701_T	Pharmaceutical Chemistry II	4	4	20	80	100
BPH_C_702_T	Pharmacognosy III	4	4	20	80	100
BPH_C_703_T	Pharmaceutical Analysis III	4	4	20	80	100
BPH_C_704_T	Pharmacology III	4	4	20	80	100
BPH_C_705_T	Pharmaceutical Jurisprudence	3	3	20	80	100
BPH_E_7xx_T	Choice Based Course V	2	2	10	40	50
	<b>TOTAL Theory</b>	<b>21</b>	<b>21</b>	<b>110</b>	<b>440</b>	<b>550</b>
BPH_C_706_L	Pharmacognosy Lab II	2	4	10	40	50
BPH_C_707_L	Pharmaceutical Analysis Lab III	2	4	10	40	50
BPH_C_708_L	Pharmacology Lab II	2	4	10	40	50
	<b>TOTAL Lab</b>	<b>6</b>	<b>12</b>	<b>30</b>	<b>120</b>	<b>150</b>
	<b>TOTAL SEM VII</b>	<b>27</b>	<b>33</b>	<b>140</b>	<b>560</b>	<b>700</b>

SEMESTER VIII

Course Code	Name	Credits	Hr/Wk	Weightage Internal	Weightage End Semester Exam	Total Marks
BPH_C_801_T	Pharmaceutical Chemistry III	4	4	20	80	100
BPH_C_802_T	Pharmaceutics IV	4	4	20	80	100
BPH_E_8xx_T	Choice Based Course VI	4	4	20	80	100
BPH_E_8xx_T	Choice Based Course VII	4	4	20	80	100
	<b>TOTAL Theory</b>	<b>16</b>	<b>16</b>	<b>80</b>	<b>320</b>	<b>400</b>
BPH_C_803_L	Pharmaceutical Chemistry Lab II	2	4	10	40	50
BPH_C_804_L	Pharmaceutics Lab IV	2	4	10	40	50
BPH_E_805_D	Project	6	12	-	200	200
	<b>TOTAL Lab</b>	<b>10</b>	<b>20</b>	<b>20</b>	<b>280</b>	<b>300</b>
	<b>TOTAL SEM VIII</b>	<b>26</b>	<b>36</b>	<b>100</b>	<b>600</b>	<b>700</b>

  
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**UNIVERSITY OF MUMBAI**  
**No. UG/128 of 2016-17**

**CIRCULAR:-**

A reference is invited to the syllabi relating to the Master of Pharmacy (M.Pharm.) degree course vide this office Circular No.UG/319 of 2004, dated 5<sup>th</sup> August, 2004 and the Principals of affiliated Colleges in Pharmacy are hereby informed that the recommendation made by Ad-hoc Board of Studies in Pharmacy at its meeting held on 7<sup>th</sup> July, 2016 has been accepted by the Academic Council at its meeting held on 14<sup>th</sup> July, 2016 vide item No. 4.16 and that in accordance therewith, the revised syllabus as per **Choice Based Credit System for Master of Pharmacy (Sem. I to IV)**, which is available on the University's web site ([www.mu.ac.in](http://www.mu.ac.in)) and that the same has been brought into force with effect from the academic year 2016-17.

MUMBAI - 400 032  
9<sup>th</sup> November, 2016

*[Signature]*  
(Dr.M.A.Khan)  
REGISTRAR

To,

The Principals of affiliated Colleges in Pharmacy.

**A.C/ 4.16/14/07/2016.**

\*\*\*\*\*

No. UG/128-A of 2016      MUMBAI-400 032      9<sup>th</sup> November, 2016

Copy forwarded with compliments for information to:-

1. The Dean, Faculty of Technology,
2. The Chairmen, Board of the Studies in Pharmacy.
3. The Director, Board of College and University Development.
4. The Controller of Examinations,
5. The Co-Ordinator, University Computerization Centre.

*[Signature]*  
(Dr.M.A.Khan)  
REGISTRAR  
... PTO

*[Signature]*  
**Dr. (Mrs.) Supriya S. Shidhaye**  
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**M. Pharm. Semester I: ALL BRANCHES OF STUDY**

**Total Credits: Semester I – 24**

Subject Code	Subject	Type of course (C/CBS)	Credits	Contact (hrs/wk)	ESE (hr)	Weightage CIA	Weightage ESE
MPH_C_101_T	Modern Pharm. and Med. Chem.	C	4	3 L + 1 IL	3	15 ST + 5 A	80
MPH_C_102_T	Modern Pharmaceutics	C	4	3 L + 1 IL	3	15 ST + 5 A	80
MPH_C_103_T	Modern Pharmacology	C	4	3 L + 1 IL	3	15 ST + 5 A	80
MPH_C_104_T	Modern Analytical Techniques	C	4	3 L + 1 IL	3	15 ST + 5 A	80
MPH_C_105_T	Study of Natural Products	C	4	3 L + 1 IL	3	15 ST + 5 A	80
MPH_C_106_S	Seminar	C_NUE S	4	4 IL	-	100 IA	

*IA Internal Assessment;*

*ST Sessional Test/s;*

*L Lectures;*

*IL Integrated Learning involving Tutorials, Group Discussions, Assignments, Field Work;*

*P Practicals, Lab. work, Project;*

*CBS Choice Based Subject;*

*ESE End Semester Examination;*

*A Attendance,*

*C Core;*

*S Self Study.*

In Semester I learners of all Branches will take the above 5 subjects, irrespective of their area of specialization in M. Pharm. The Evaluation pattern for every subject will be 20 marks for Continuous Internal Assessment (CIA) and 80 marks for the End Semester Examination. The 20 marks for CIA will be divided into 5 marks for Attendance and 15 marks for a sessional test held mid-semester.

Every learner will deliver a Seminar. This will be evaluated at the college level by a Committee consisting of the Principal, and faculty of the Department in which the student will be doing his

*[Signature]*  
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research work. After the conduct of the Seminar the marks will be forwarded by the college/institution to the University.

#### M. Pharm. Semester II: ALL BRANCHES OF STUDY

Total Credits: Semester II – 24

Subject Code	Subject	Type of course (C/CBS)	Credits	Contact (hrs/wk)	ESE (hr)	Weightage CIA	Weightage ESE
MPH_C_201_T	Biostatistics and Research Methodology	C	4	3 L + 1 IL	3	15 ST + 5 A	80
MPH_C_2XX_T	Core I	C	4	3 L + 1 IL	3	15 ST + 5 A	80
MPH_C_2XX_T	Core II	C	4	3 L + 1 IL	3	15 ST + 5 A	80
MPH_E_2XX_T	Choice Based Subject I	CBS	4	3 L + 1 IL	3	15 ST + 5 A	80
MPH_E_2XX_T	Choice Based Subject II	CBS	4	3 L + 1 IL	3	15 ST + 5 A	80
MPH_C_299_L	Experimental Techniques in Pharmaceutical Sciences	C	4	8 P	6	15 ST + 5 A	80

*IA Internal Assessment;*

*ST Sessional Test/s;*

*L Lectures;*

*IL Integrated Learning involving Tutorials, Group Discussions, Assignments, Field Work;*

*P Practicals, Lab. work, Project;*

*CBS Choice Based Subject;*

*ESE End Semester Examination;*

*A Attendance,*

*C Core;*

*S Self Study.*

In the second semester, there will be one common paper (Biostatistics and Research Methodology) and a practical (Experimental Techniques in Pharmaceutical Sciences) for all the branches of specialization. At present the syllabus for Experimental Techniques in Pharmaceutical Sciences has been prepared for the main branches of specialization – namely Pharmaceutical Chemistry/Medicinal Chemistry, Pharmaceutics, Pharmacognosy, Pharmaceutical Analysis/Quality Assurance and Pharmacology. Learners of other branches of specialization like Clinical Pharmacy, Medicinal

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**M. Pharm. Semester III and Semester IV: ALL BRANCHES OF STUDY**

**Total Credits: Semester III – 24 (MPH\_C\_301\_D), Semester IV-24 (MPH\_C\_401\_D)**

**Research work related to the title of the thesis that has been registered with the University.**


The learner should be allotted a Research Guide in Semester I. The Guiding Teacher (Research Supervisor) along with the learner may plan the Research area to be pursued during Semesters III and IV. The title of the thesis should be communicated to the University before the commencement of Sem. III. Title change request if any, at a later time, should have a valid reason and will be considered under the existing rules of the University for title change (minor or major). Any request for change in title should be communicated to the University by the learner through the Research Guide and the Principal of the College/Institute. The learner is expected to work a minimum of 40 hrs/week in Research to be entitled for 24 Credits each in Semester III and IV. The Guiding Teacher (Research Supervisor) will sign a statement to this effect at the conclusion of Semesters III and IV, which may be communicated to the Controller of Examinations at the conclusion of each semester. Before completing the course, the learner will be required to give a Colloquium on the research work carried out by him/her during Semesters III and IV. The Colloquium will follow an open structure and will be assessed besides others by the Head of the Department, the Guide and the Principal of the College. A Statement that the learner has delivered a Colloquium must be sent to the University and will be mandated before the conduct of the viva-voce examination by the University.

Learners should be encouraged to attend conferences, seminars where they may present their research work, and to publish the findings of their research.

There will be no ESE at the end of Semester III. A learner will be permitted to submit his/her synopsis no earlier than 20 months (after 20 months) from the beginning of the M. Pharm program as instructed by the Government/Regulatory Authority for the respective year, BUT will have to submit the final thesis by the end of 24 months from the beginning of the M. Pharm program as instructed by the Government/Regulatory Authority. The time between submission of synopsis and thesis should be at least one month.

**Any late submission of synopsis or thesis will result in the learner requiring to keep terms for the next semester and any subsequent semester/s till the learner finishes his/her degree.**

At the end of Semester IV the learner will submit a thesis to the university. This will jointly be evaluated by the guiding teacher and an external examiner appointed by the university from academia or from the pharmaceutical industry. The evaluation will be for a total of 100 marks (**value of 48 credits**), of which 50 marks will be given by the guiding teacher and 50 marks by the external examiner. The parameters on which the marks will be given are: a. Literature Survey (10 marks) b. Presentation (8 marks) c. Methodology (7 marks) d. Results and Discussion (10 marks) and e. Viva-voce (15 marks). This makes a total of 50 marks each to be given by the guiding teacher and by the external examiner separately. These marks will be allotted to the course designated as MPH\_C\_301\_D + MPH\_C\_401\_D for a total value of 48 credits.


  
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The submission of synopsis and the holding of the viva voce examination shall be done independent of the fact whether the student has successfully cleared semester I and Semester II. However, the result of the viva voce of M. Pharm. Examination will be declared only if the student has successfully cleared Semester I and Semester II examinations

Total Credits for M. Pharm:

Semester I -24 + Semester II -24 + Semester III - 24 + Semester IV - 24 = 96 credits

  
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# UNIVERSITY OF MUMBAI




**Revised Syllabus**

**Program: M.Pharm**

**Semester I to IV**

**(Credit Based Semester and Grading System  
with effect from the academic year 2013–2014)**

  
  
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M. Pharm. Credit Based System

Scheme Examination Semesters I to IV

&

Syllabus Semesters I to IV

For ALL BRANCHES OF M. PHARM.

  
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Dr. (Mrs.) Supriya S. Shidhaye  
Principal  
Vivekanand Education Society's  
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**M. Pharm.**

**Semester I (For All Branches of Study)**

No.	Title of the subject	Type of Course	Credits	Contact hours/week			ESE (hour)		Weightage (%)		
									CIA		ESE
		C/E/S		L	I.L	P	T	P	ST	IA	
1	Modern Pharm. & Med. Chem.	C	4	3	1	-	3	-	15	10	75
2	Modern Pharmaceutics	C	4	3	1	-	3	-	15	10	75
3	Modern Pharmacology	C	4	3	1	-	3	-	15	10	75
4	Modern Pharmaceutical Analysis	C	4	3	1	-	3	-	15	10	75
5	Study of Natural Products	C	4	3	1	-	3	-	15	10	75
6	Seminar	C	4		4	-	-	-	-	100	-

**CIA** Continuous Internal Assessment; **ESE** End Semester Examination; **ST** Sessional Tests; **IA** Internal Assessment, **L** Lectures, **I.L** Integrated Learning involving Tutorials, Group Discussions, Assignments, Field Work; **P** Practicals, Lab. work, Project, **C** Core, **E** Elective, **S** Self Study.

**Total Credits: Semester I – 24**

In Semester I learners of all Branches will take the above 5 subjects, irrespective of their area of specialization in M. Pharm. The Evaluation pattern for every subject will be 25 marks for Continuous Internal Assessment (CIA) and 75 marks for the End Semester Examination. The 25 marks for CIA will be divided into 5 marks for Attendance and 5 marks for surprise quizzes and student-teacher interaction and 15 marks for a Periodic test held mid-semester.

Every learner will deliver a Seminar. This will be evaluated at the college level by a Committee consisting of the Principal, and faculty of the Department in which the student will be doing his research work. After the conduct of the Seminar the marks will be forwarded by the college/institution to the University.

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Semester II (Branch wise)

No.	Title of the subject	Type of Course	Credits	Contact hours/week			ESE (hour)		Weightage (%)		
									CIE	IA	ESE
		C/E/S		L	I.L	P	T	P	ST	IA	
1	Biostatistics and Research Methodology	C	4	3	1	-	3	-	15	10	75
2	Core Subject 1	C	4	3	1	-	3	-	15	10	75
3	Core Subject 2	C	4	3	1	-	3	-	15	10	75
4	Elective 1	E	4	3	1	-	3	-	15	10	75
5	Elective 2	E	4	3	1	-	3	-	15	10	75
6	Experimental Techniques in Pharmaceutical Sciences	C	4	-	-	8	6	-	15	10	75

CIA Continuous Internal Assessment; ESE End Semester Examination; ST Sessional Tests; IA Internal Assessment, L Lectures, I.L. Integrated Learning involving Tutorials, Group Discussions, Assignments, Field Work; P Practicals, Lab. work, Project, C Core, E Elective, S Self Study.

In the second semester, there will be one common paper Biostatistics and Research Methodology and a practical Experimental Techniques in Pharmaceutical Sciences for all the branches of specialization. At present the syllabus for Experimental Techniques in Pharmaceutical Sciences has been prepared for the main branches of specialization – namely Pharmaceutical Chemistry/Medicinal Chemistry, Pharmaceutics, Pharmacognosy, Pharmaceutical Analysis/Quality Assurance and Pharmacology. Students of other branches of specialization like Clinical Pharmacy, Medicinal Natural Products, Biopharmaceutics and Pharmacokinetics etc. can choose to do the exercises prescribed for any one of the above mentioned branches, preferably selecting something closest to their branch of specialization. Each Branch of Specialization will also have two Core subjects in the Branch of Specialization and two Electives that may be selected from the List of Electives specified in the Syllabus.

The ESE in the subject Experimental Techniques in Pharmaceutical Sciences will be conducted by the college/institution on behalf of the university. After the conduct of the examination, the marks will be forwarded by the college/institution to the University

**Total Credits: Semester II – 24**

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#### Semesters III and IV

Research work related to the title of the thesis that has been registered with the University.

The learner should be allotted a Research Guide in Sem. I. The Guiding Teacher (Research Supervisor) along with the learner may plan the Research area to be pursued during Sems. III and IV. The title of the thesis should be communicated to the University before the commencement of Sem. III. The learner is expected to work a minimum of 40 hrs/week in Research to be entitled for 24 Credits each Semester. The Guiding Teacher (Research Supervisor) will sign a statement to this effect at the conclusion of Semesters III and IV, which may be communicated to the Controller of Examinations at the conclusion of each semester. Before completing the course, the learner will be required to give a Colloquium on the research work carried out by him/her during Sems. III and IV. The Colloquium will follow an open structure and will be assessed besides others by the Head of the Department, the Guide and the Principal of the College. A Statement that the learner has delivered a Colloquium must be sent to the University and will be mandated before the conduct of the *viva-voce* examination by the University.

Learners should be encouraged to attend conferences, seminars where they may present their research work, and to publish the findings of their research.

At the end of Sem. IV the learner will submit a thesis to the university. This will jointly be evaluated by the guiding teacher and an external examiner appointed by the university from academia or from the pharmaceutical industry. The evaluation will be for a total of 100 marks, of which 50 marks will be given by the guiding teacher and 50 marks by the external examiner. The parameters on which the marks will be given are: a. Literature Survey (10 marks) b. Presentation (8 marks) c. Methodology (7 marks) d. Results and Discussion (10 marks) and e. Viva-voce (15 marks). This makes a total of 50 marks to be given by the guiding teacher and by the external examiner separately.

Total Credits for M. Pharm. 96

  
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