Criteria 1- Curricular Aspects

Key Indicator 1.3. - Curriculum Enrichment

1.3.2 - Average percentage of courses that include experiential learning through project work/field work/internship during last five years

DVV Query

Kindly provide document showing the experimental learning through project work/field work/internship as prescribed by the affiliating university / affiliating university curriculum

DVV Response

The required documents are attached below.

INDEX

Table 1.3.2.1 :Courses Prescribing Experiential Learning through project work/field work/internship as prescribed by the affiliating university / affiliating university curriculum

Implementation Years	Pattern	Program code	Program Name	Course code	Course Name
2012-13	CBSGS	BP	BPharm	-	Internship/Industrial training
2016-17	CBCS	BP	BPharm	BPH_E_805_D	Project
2016-17	CBCS	BP	BPharm	-	Internship/Industrial training
2016-17	CBSGS	MPH/ MQA/ MPC	MPharm	DPM-M4	Research Project
2017-18	CBSGS	PPH	PhD (Pharmaceutics)	PhdC102	Seminar
2017-18	CBSGS	PPH	PhD (Pharmaceutics)	PhdS103	Research Project
2016-17	CBCS	MPH/ MQA/ MPC	MPharm (Pharmaceutics)/ MPharm (Quality Assurance)/ MPharm (Pharmaceutical Chemistry)	MPH_C_106_S	Seminar
2016-17	CBCS	MPH/ MQA/ MPC	MPharm (Pharmaceutics)/ MPharm (Quality Assurance)/ MPharm (Pharmaceutical Chemistry)	MPH_C_301_D MPH_C_401_D	Research Work
2017-18	CBCS	PPH / PPC	PhD (Pharmaceutics)/ PhD (Pharmaceutical Chemistry)	PhdS103	Seminar
2017-18	CBCS	PPH / PPC	PhD (Pharmaceutics)/ PhD (Pharmaceutical Chemistry)	PhdS104	Research Project
2019-20	CBCS	MPH/ MQA/ MPC	MPharm (Pharmaceutics)/ MPharm (Quality Assurance)/ MPharm (Pharmaceutical Chemistry)	MRM106SA	Seminar / Assignment

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

Dr. (Mrs.) Sophya 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

Hashu Advani Complex, Near Collector's Colony, Chembur (E) Mumbai 400074

Implementation Years	Pattern	Program code	Program Name	Course code	Course Name
2019-20	CBCS	MPH/ MQA/ MPC	MPharm (Pharmaceutics)/ MPharm (Quality Assurance)/ MPharm (Pharmaceutical Chemistry)	MRM206SA	Seminar / Assignment
2019-20	CBCS	MPH/ MQA/ MPC	MPharm (Pharmaceutics)/ MPharm (Quality Assurance)/ MPharm (Pharmaceutical Chemistry)	MRM302JC/ MRM401JC	Journal Club Activity
2019-20	CBCS	MPH/ MQA/ MPC	MPharm (Pharmaceutics)/ MPharm (Quality Assurance)/ MPharm (Pharmaceutical Chemistry)	MRM303DP / MRM402DP	Discussion / Presentation (Proposal Presentation)
2019-20	CBCS	MPH/ MQA/ MPC	MPharm (Pharmaceutics)/ MPharm (Quality Assurance)/ MPharm (Pharmaceutical Chemistry)	MRM304EW	Research Work
2020-21	CBCS	PPH / PPC	PhD (Pharmaceutics)/ PhD (Pharmaceutical Chemistry)	Phd C106	Research Project

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

Pages from Syllabus Supporting the DVV

AC 27/2/2013 Item no 4.87

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)

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 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.

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

Semester II (Branch wise)

No.	Title of the subject	Type of Course	Credits	Contact hours/week			ESE (hour)		Weightage (%)		
									CIE		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

Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

Dr. (Mrs.) Supriya S. Shidhaye

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

Vivekanand Education Society's College of Pharmacy
Chembur
Mumbai
400 074.
INDIA

Dr. (Mrs.) Shobha S. Shidhaye
Vice-President, Vivekanand Education Society's
HAN... Colony
Chembur, Mumbai - 400 074.

University of Mumbai

No. Th./68 /of 2011.
Mumbai – 400 032.
November, 2011.

To,

The Principal,
Bombay College of Pharmacy,
Kalina, Santacruz (E),
Mumbai – 400 098.

Sir/Madam,

The Principals / Directors of the Affiliated Pharmacy Colleges are hereby informed that the Ad-hoc Board of Studies in Pharmacy at its meeting held on 4th May, 2011, has recommended the following guidelines to be adopted for the Ph.D. course work to be conducted by the Research Centres as per UGC guidelines No.Exam./Thesis/Univ./VCD/ 2414 of 2010, dated 18th November, 2010.

for CONTROLLER OF EXAMINATIONS

Vivekanand Education Society's College of Pharmacy
Chembur
Mumbai
400 074.
INDIA

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

II. Course content. This will comprise of two modules:
Module I: Research Methodology Theory
Module II: research Methodology Practical Assignments

Module I

The detailed syllabus for Module I is as follows:
Research Methodology Theory:

1. Objective and purpose of Research Types of Research (Educational, Clinical, Experimental, Basic, Applied, Patient Oriented Research)

2. Literature Survey – Use of Library, Books & Journals/Medline/Internet, obtaining patents and reprints of articles.

3. Selecting a problem and preparing research proposal for different types of research mentioned above.

4. Methods and tools used in research
   - Qualitative and Quantitative studies
   - Simple data organization, Descriptive data analysis
   - Limitations and sources of errors
   - Importance of Intellectual property rights in Intellectual ownership
   - Statistical analysis of data including variance, standard deviation, standard error, chi square, students' "t" test and anova, correlation of data and its interpretation, computer data analysis

5. Documentation
   - Techniques and importance of documentation
   - Uses of computer packages in documentation

6. Scientific writing (Formatting)
   - Different types of research papers
   - Title and author agency
   - Abstract, Key words
   - Methodology

Dr. (Mrs.) Sunita S. Shidhaye
Principal
Vivekanand Education Society's
College of Pharmacy
HAMC Campus, Antop Hill Colony,
Chembur, Mumbai - 400 074.

[illegible] Presentation
[illegible] Importance, types, different styles
[illegible] Introduction and ending
[illegible] visual aids
[illegible]

8. [illegible] Patents, Designs and copyrights
   - Intellectual Property Rights (IPR)
   - Product Patent, Process Patent
   - Requirements and Preparation of patent proposal
   - Registration of patents in foreign countries

9. Cost Analysis of the project
   - Cost incurred on raw materials
   - Cost incurred on procedure
   - Cost incurred on instrumentation
   - Cost incurred on preclinical and or clinical studies
   - Commercialisation of patents

10. Sources for procurement of Research Grants

11. Industry-Institute Interaction, Industry Projects-Feasibility Studies

Books Recommended:

1. Research in Education – John W. Best and James V Khan
   Publishers - Prentice Hall of India Pvt. Ltd.
   New Delhi, 1999

2. Effective Business Report Writing – Brown, Leland
   First ed. Publisher-Prentice Hall, Inc. India, 1981

3. Presentation Skills- Michael Hatton
   Publisher – Indian Society for Technical Education
   New Delhi, 1990

4. Technical Writing Skills – Anderson, Jonathan and Durston Barry H.
   Publisher Wiley Eastern Ltd. Bangalore, 1990

5. Writing a Technical Paper – Donald H. Menzel,
   Publishers-McGraw – Hill Book Comp. Inc.,
   New York, 1951

[illegible] Project work

[illegible] Practical projects to be undertaken under the direct supervision and guidance of the research [illegible] and will be relevant in the research [illegible] by the respective [illegible] equipment and a viva-voce examination [illegible] project. This will comprise of assignments, presentation and a viva-voce examination [illegible] conducted by the research centre.

[illegible]

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
Chembur
Mumbai
400 074.
INDIA

IV) Qualifying Criteria

Minimum 50% marks in each of theory and practical module.

A certificate of completion of the course work duly signed by the research guide and the head of the research centre shall be given to each candidate. A copy of this will be sent to the University and the records of the same will be maintained by the respective research centre at least six (6) months after the award of Ph.D. degree to the concerned candidate.

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

AC 14.6.2018

Item Number : 4.53

UNIVERSITY OF MUMBAI

Bachelor of Pharmacy

B. Pharm. Choice Based Credit System (CBCS)

Third Year B. Pharm. and Final Year B. Pharm

(Semester V to Semester VIII),

from Academic Year 2018 -19 and 2019-20

From Coordinator's Desk:

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited. In line with this Faculty of Technology of University of Mumbai has taken a lead in incorporating philosophy of outcome based education in the process of curriculum development.

Faculty of Technology, University of Mumbai, in one of its meetings unanimously resolved that, each Board of Studies shall prepare some Program Educational Objectives (PEO's), give freedom to affiliated Institutes to add few (PEO's) course objectives course outcomes to be clearly defined for each course, so that all faculty members in affiliated institutes understand the depth approach of course to be taught, which will enhance learner's learning process. It was also resolved that, maximum senior faculty from colleges and experts from industry should to be involved while revising the curriculum. I am happy to state that, each Board of studies has adhered to the resolutions passed by Faculty of Technology, developed curriculum accordingly. In addition to outcome-based education, **Choice Based Credit and Grading System** is also introduced to ensure quality of engineering education.

Choice Based Credit and Grading System enables a much-required shift in focus from teacher-centric to learner-centric education since the workload estimated is based on the investment of time in learning not in teaching. It also focuses on continuous evaluation which will enhance the quality of education. University of Mumbai has taken a lead in implementing the system through its affiliated Institutes. Faculty of Technology has devised a transparent credit assignment policy adopted ten points scale to grade learner's performance. Credit grading-based system was implemented for First Year of B. Pharmacy from the academic year 2016-2017. Subsequently this system was carried forward for Second Year B. Pharmacy in the academic year 2017-2018, Third Year in the academic years 2018-2019 and Final Year B. Pharmacy in the academic year 2019-2020.

Dr. S. K. Ukarande
Dean – Faculty of Science and Technology,
Member - Academic Council
University of Mumbai, Mumbai

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
Chembur Mumbai 400 074. INDIA

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
	TOTAL Theory	21	21	110	440	550
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
	TOTAL Lab	6	12	30	120	150
	TOTAL SEM VII	27	33	140	560	700

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

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
	TOTAL Theory	**16**	**16**	**80**	**320**	**400**
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
	TOTAL Lab	**10**	**20**	**20**	**280**	**300**
	TOTAL SEM VIII	26	36	100	600	700

Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

M. Pharm. Choice Based Credit System (CBCS)[2016-17]
Scheme Examination Semesters I to IV
&
Syllabus Semesters I to IV

For ALL BRANCHES OF M. PHARM.

[REVISED 2016]

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_NUES	4	4 IL	-	100 IA	

IA Internal Assessment; *ESE End Semester Examination;*
ST Sessional Test/s; *A Attendance,*
L Lectures;
IL Integrated Learning involving Tutorials, Group Discussions, Assignments, Field Work;
P Practicals, Lab. work, Project; *C Core;*
CBS Choice Based Subject; *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 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.

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; *ESE End Semester Examination;*
ST Sessional Test/s; *A Attendence,*
L Lectures;
IL Integrated Learning involving Tutorials, Group Discussions, Assignments, Field Work;
P Practicals, Lab. work, Project; *C Core;*
CBS Choice Based Subject; *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

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074 INDIA

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

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 Choice Based Subjects that may be selected from the List of Choice Based Subjects 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

Vivekanand Education Society's College of Pharmacy
Chembur Mumbai 400 074 INDIA

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

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.**

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

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

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. 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 24th 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 [illegible] of Joint Co-ordinator Faculty of Technology approved by the Academic Council at its meeting held on 20th September, 2016 vide Cir. No. [illegible] for implementation towards the revised syllabus as per the Credit Based Grade 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.

(Dr.M.A.Khan)
REGISTRAR

MUMBAI – 400 032
[illegible] January, 2017

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/ [illegible] of 2016-17 MUMBAI-400 032 [illegible] 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 in 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, Diamond Collection Colony,
Chembur, Mumbai-400 074.

Vivekanand Education Society's College of Pharmacy
Chembur
Mumbai
400 074.
INDIA

AC – 30/09/2016

Item No. 4.17

UNIVERSITY OF MUMBAI

Revised Syllabus for PhdCourse Work

(As per Credit Based Semester and Grading System with effect from the academic year 2017–2018)

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 SEMESTER 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 gradesto 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.

Vivekanand Education Society's College Chembur Mumbai

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. UG/ 57 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/87 of 2016-17 dated 13th 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 14th June, 2019 have been accepted by the Academic Council at its meeting held on 26th July, 2019 vide item No. 4.39 and that in compliance thereof, the Manual and Revised Scheme and Syllabus as per the CBCS for the Modules 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

Dr. Ajay Deshmukh
REGISTRAR

MUMBAI - 400 032
14th August, 2019

To,

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

A.C/4.39/26/07/2019

No. UG/ 57 -A/ of 2019-20 MUMBAI-400 032 14th 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 Coordinator, University Computer Unit

(Dr. Ajay Deshmukh)
REGISTRAR

Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

Dr. (Mrs.) Sunetra S. Shirbhaye
Principal
Education Society's
College of Pharmacy,
Chembur, Mumbai-400 074.

Cover Page

Item No. 4.39

UNIVERSITY OF MUMBAI

Syllabus for Approval

Sr. No.	Heading	Particulars
1	Faculty	
2	Course	Bachelor of Pharmacy (B. Pharm.)
3	Eligibility for Admission	H.S.C. / CET
4	Passing Marks	50%
5	Ordinances/ Regulations (if any)	
6	No. of Years	4 (Four) Years / 8 (Eight) Semesters
7		PG: [illegible] UG: [illegible]
		(Strike out which is not applicable)
8	Pattern	Yearly / Semester (Strike out which is not applicable)
9	Status	New / Revised (Strike out which is not applicable)
10	To be implemented from Academic Year	From Academic Year 2019-20

Date 9/9/19

Signature

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

Vivekanand Education Society's College of Pharmacy
Chembur
Mumbai
400 074.
INDIA

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

INTRODUCTION

RECOMMENDATIONS OF NATIONAL REGULATORY AUTHORITIES

The University Grants Commission (UGC), the **National Assessment and Accreditation Council (NAAC)**, the **Distance Education Council (DEC)** and the **National Knowledge Commission (NKC)** have time and again come out with recommendations for improving the quality and effectiveness of Higher education provisions in the country. The ministry of Human Resource Development at the Central level and the Ministry of Higher & Technical Education, Govt. of Maharashtra have also repeatedly stressed on the need for universities to pay prompt attention to improve the quality of education. The **National Knowledge Commission (NKC)**, in its report to the Prime Minister on 29th November 2006) has also reiterated the importance of higher education and the contribution it has made to economic development, social progress and political democracy in independent India.

An important concern voiced more strongly in recent times, is the need to develop a Choice-Based Credit System (CBCS) in tune with global trends and the adoption of a sound grading system for reflecting learner performance. This is in line with the **recommendation of the UGC** in its *Action Plan for Academic and Administrative Reforms* (Ref. UGC letters January 2008; March 2009) "……. *Curricular flexibility and learners' mobility is an issue that warrants our urgent attention. These can be addressed by introducing credit based courses and credit accumulation. In order to provide with some degree of flexibility to learners, we need to provide flexibility in course selection and also a minimum as well as a maximum permissible span of time in which a course can be completed by a learner… The Choice-Based Credit System (CBCS) imminently fits into the emerging socioeconomic milieu, and could effectively respond to the educational and occupational aspirations of the upcoming generations. In view of this, institutions of higher education in India would do well to invest thought and resources into introducing CBCS. Aided by modern communication and information technology, CBCS has a high probability to be operationalized efficiently and effectively — elevating learners, institutions and higher education system in the country to newer heights…*".

RATIONALE FOR INTRODUCTION OF CREDIT AND GRADING SYSTEM

The UGC while outlining the several unique features of the Choice-Based Credit System (CBCS) has, in fact, given in a nutshell, the rationale for its introduction. Among the features highlighted by the UGC are: *Enhanced learning opportunities, ability to match learners' scholastic needs and aspirations, inter-institution transferability of learners (following the completion of a semester), part-completion of an academic programme in the institution of enrolment and part-completion in a specialized (and recognized) institution, improvement in educational quality and excellence, flexibility for working learners to complete the programme over an extended period of time, standardization and comparability of educational programmes across the country, etc.*

This Choice Based Credit System enables a much-required shift in focus from teacher-centric to learner-centric education since the workload estimated is based on the investment of time in learning, not in teaching. It also focuses on continuous evaluation which will enhance the quality of education. It can be concluded from the above discussion that it is very much essential to implement the Choice Based Credit System in higher education in India. Course credit structure, examination/assessment and grading are mainly focused aspects of this manual and discussed in subsequent chapters.

DIRECTIVES OF PHARMACY COUNCIL OF INDIA

The Pharmacy Council of India (PCI) in exercise of the powers conferred to it under the sections 10 and 18 of the Pharmacy Act 1948 (8 of 1948), with the approval of the Central Government, had made the Bachelor of Pharmacy (B. Pharm.) Course Regulations, 2014 and Master of Pharmacy (M. Pharm.) Course regulations vide Gazette dated December 10, 2014. Further as per regulations 6 and 8 of the above course regulations the PCI has also prescribed the Rules and Syllabus for B. Pharm. course and Scheme and Syllabus for M. Pharm., its letter Ref 14-136/2016-PCI and Ref 14-154/2015 PCI dated December 21, 2016, with the subject heading "Statutory Scheme/Rules and syllabus for B. Pharm and M. Pharm. courses". It is thus mandatory to implement the directives of PCI with regard to the Rules/Regulations/Syllabus for recognition and extension of approval of B. Pharm. and M. Pharm. programs of institutes/Universities by the PCI.

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

1. ADMISSION CRITERIA

Admission to the B. Pharm. program of University of Mumbai is governed by the rules and regulations of University of Mumbai and is as per norms of the Govt. of Maharashtra through the State CET-CELL (Maharashtra State), the All India Council for Technical Education (AICTE, New Delhi), and Pharmacy Council of India (PCI, New Delhi). Minimum qualification for admission into Bachelor of Pharmacy program would be according to the rules and regulations of AICTE, PCI, Government of Maharashtra and University of Mumbai in force at the time of admission.

- **Admission criteria for First Year B. Pharm is as follows:**

In general, a learner who has passed HSC or its equivalent examination with Physics and Chemistry as compulsory subjects along with one of the Mathematics or Biotechnology or Biology and obtained at least 50% marks (at least 45 marks in case of candidates of backward category and persons with disability belonging to Maharashtra state only.) in the above subjects taken together and obtained score in CET/ NEET / any other equivalent exam is eligible for admission to Semester I of First Year B. Pharm. However, the rules/regulations and qualifications for admission will be those in effect at the day and time of admission.

- **Admission criteria for admission into Semester III of Bachelor of Pharmacy (Lateral Entry to Second Year B. Pharm.) is as follows:**

In general, a learner who has passed Diploma course in Pharmacy with an aggregate of 45% (at least 40 marks in case of candidates of backward category and persons with disability belonging to Maharashtra state only.) from an All India Council for Technical Education or Pharmacy Council of India or Central or State Government approved institutions or its equivalent. However, the rules/regulations and qualifications for admission will be those in effect at the day and time of admission.

2. COURSE STRUCTURE

2.1. Duration of the program

The course of study for B. Pharm. shall extend over a period of eight semesters (four academic years) and six semesters (three academic years) for lateral entry students. The medium of instruction shall be English.

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

2.2. Working days in each semester

Each semester shall consist of not less than 100 working days. The odd semesters shall be conducted from the month of July to November/December and the even semesters shall be conducted from December/January to May/June in every calendar year.

As the requirements for a particular degree (undergraduate or postgraduate), a certain quantum of academic work measured in terms of credits is laid down in general. Learner earns credits every semester by satisfactorily clearing courses/other academic activities. The amount of credit associated with a course is dependent upon the number of hours of instruction per week in that course. Similarly the credit associated with any of the other activities is dependent upon the quantum of work expected to be put in for each of the other activity per week.

2.3. Attendance and progress

A candidate is required to put in at least 75% attendance in individual courses considering theory and practical separately. The candidate shall complete the prescribed course satisfactorily to be eligible to appear for the respective examinations.

2.4. Credit Assignment

2.4.1. Theory and Laboratory Courses:

Courses are broadly classified as *Theory courses* and *Laboratory Courses*. Theory courses consist of lecture (L) and /or tutorial (T) hours. Laboratory courses consist of practical hours, but may have attached tutorial hours in special cases. Credit (C) for a course is dependent on the number of hours of instruction per week in that course, and is obtained by using a multiplier of one (1) for lecture and tutorial hours, and a multiplier of half (1/2) for laboratory hours. Thus, for example, a theory course having **four** lectures and **one** tutorial per week throughout the semester carries a credit of **5**. Similarly, a laboratory course having **two** laboratory hours per week throughout semester carries a credit of **1**.

For example –

Theory course			
L	T	=	C
3	1		4

Laboratory course			
P	T	=	C
4	0		2

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

2.4.2. Projects/Dissertations

Project is a requirement for the B. Pharm. degree, wherein under the guidance of a faculty member, a group of not more than five learners in the eighth semester, is required to do some innovative work with the application of knowledge gained while learning various courses in the earlier years. The learner/s is/are expected to do a survey of literature in the subject, work out a Project plan and carry it out through survey, experimentation and/or modeling / computation. Through the Project work the learner has to exhibit skills for both analysis and critical thinking. The complete details of the project have to submitted as a report of not less than 25 pages (A4, 1 inch margins, single line space, font Times Roman, font size 12, excluding count of reference pages) to the College before the prescribed date. The credits assigned for Project is **6** credits.

2.4.3. Practice School

In the VII semester, every candidate shall undergo practice school for a period of 150 hours evenly distributed throughout the semester. The student shall opt any one of the domains for practice school declared by the program committee from time to time.

At the end of the practice school, every student shall submit a printed report (in triplicate) on the practice school he/she attended (not more than 25 pages). Along with the exams of semester VII, the report submitted by the student, knowledge and skills acquired by the student through practice school shall be evaluated by the subject experts at college level and grade point shall be awarded. The credits assigned for Practice School is **6** credits.

2.4.4. Industrial training (Desirable)

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

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

2.5. Minimum Credit Requirements

The minimum credit points required for award of a B. Pharm. degree is 208 plus credit of 1 for extra-curricular and co-curricular activities. These credits are divided into Theory courses, Tutorials, Practical, Practice School and Project over the duration of eight semesters. The credits are distributed semester wise as shown in the structure and syllabus manual. Courses generally progress in sequences, building competencies and their positioning indicates certain academic maturity on the part of the learners. Learners are expected to follow the semester wise schedule of courses given in the syllabus.

The lateral entry students shall get **52** credit points transferred from their D. Pharm program. Such students shall take up additional remedial courses of 'Communication Skills' (Theory and Practical) and 'Computer Applications in Pharmacy' (Theory and Practical) equivalent to 3 and 4 credit points respectively, a total of 7 credit points to attain 59 credit points, the maximum of I and II semesters.

2.6. Course/Subject codes:

In the syllabus manual of each programme of a particular discipline, subject code is assigned for each course as follows:

- First two characters are alphabets and indicate the program of a particular discipline (BP indicates B. Pharm.).
- Third digit indicates semester number (1 indicates first Semester).
- The next two digits indicate chronological order of the course in the list of the subjects of the respective semester (01 indicates first course in the list of all courses of the respective semester).
- Alphabets onward sixth indicates nature of the course i.e. T indicates Theory, P indicates Practical and ET indicates Elective Theory, R indicates Remedial, PS indicates Practice School, PW indicates Project Work.

For example –

✓ BP101T indicates a B. Pharm. course of semester one and first theory course

✓ BP107P indicates a B. Pharm. course of semester one and seventh practical course

✓ BP807ET indicates a B. Pharm. course of semester eight and seventh elective theory course

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

3. EXAMINATION / ASSESSMENT AND GRADING

Semester wise performance assessment of every registered learner is to be carried out through various modes of examinations, in both theory and laboratory classes. These include Internal Assessment and End Semester Examination.

3.1. End semester examinations

The End Semester Examinations in Semesters I, II, III, IV, V and VI of the B. Pharm. Degree course will be conducted by the respective institutions/colleges where the learner has been admitted following rules and regulations. The examinations in Semesters VII and VIII will be conducted by the university. All Non University Examination Subjects (NUES) marked with asterisk symbol (*) syllabus structure, will have examinations conducted by the subject experts at college level and the marks/grades shall be submitted to the university.

A common time-table and common question papers for all the theory examinations of different semesters will be prepared/set by the university as per the procedure.

The question papers for the Theory courses in Semesters I, II, III, IV, V, VI, VII, and VIII will be set by examiners and paper-setters appointed by the University.

The assessment and moderation of the answer booklets for the examinations in Theory courses in Semesters I to VI will be carried out by respective institutions/colleges by the examiners and moderators appointed by the principals of the institutions/colleges for each paper from the panel approved by the Ad-hoc Board of Studies in Pharmacy.

Principals of the respective institutions/colleges are authorized to appoint examiners in the Practical examinations at Semesters I to VI on behalf of the university, only from the panel of suitable persons for appointment as examiners prepared by the Ad-hoc Board of Studies in Pharmacy.

The assessment and moderation of the answer booklets of the Theory courses in Semesters VII and VIII will be conducted by the University through Central

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

Assessment Programme (CAP) or On Screen Marking (OSM) or as directed by the University of Mumbai.

The End Semester Examination for Laboratory classes for Semesters I to VI would be done at the institutional level by a pair of examiners appointed by the institution. For Semesters VII and VIII, the University would appoint two examiners for each Laboratory prescribed in Semesters VII and VIII. Evaluation would be done by the examiners appointed by the University at the place and time announced by the University.

3.2. Internal assessment: Continuous mode

The marks allocated for Continuous mode of Internal Assessment shall be awarded as per the scheme given below.

Table-1: Scheme for awarding internal assessment: Continuous mode

Theory		
Criteria	Maximum Marks	
	100 M Course	50 M Course
Attendance (Refer Table – 2)	4	2
Academic activities (Average of any 3 activities e.g. quiz, assignment, open book test, field work, group discussion and seminar)	3	1.5
Student – Teacher interaction	3	1.5
Total	10	5
Practical		
Attendance (Refer Table – 2)	2	
Based on Practical Records, Regular viva voce, etc.	3	
Total	5	

Table- 2: Guidelines for the allotment of marks for attendance

Percentage of Attendance	Theory	Practical
90 – 100	4	2
95 – 99	3	1.5
80 – 84	2	1
75 – 79	1	0.5

Less than 75	0	0

3.3. Sessional Exams

Two Sessional exams shall be conducted for each theory / practical course as per the schedule fixed by the college(s). The scheme of question paper for theory and practical Sessional examinations is given below. The average marks of two Sessional exams shall be computed for internal assessment as per the requirements given in tables of Schemes for internal assessments and end semester examinations.

Sessional exam shall be conducted for 30 marks for theory and shall be computed for 15 marks. Similarly Sessional exam for practical shall be conducted for 40 marks and shall be computed for 10 marks.

Question paper pattern for theory Sessional examinations

- **For subjects having University examination**

I. Multiple Choice Questions (MCQs) (Answer all the questions)	= 10 x 1	= 10
I. Long Answers (Answer 1 out of 2)	= 1 x 10	= 10
II. Short Answers (Answer 2 out of 3)	= 2 x 5	= 10
Total	= **30 marks**	

- **For subjects having Non University Examination**

I. Long Answers (Answer 1 out of 2)	= 1 x 10	= 10
II. Short Answers (Answer 4 out of 6)	= 4 x 5	= 20
Total	= **30 marks**	

- **Question paper pattern for practical sessional examinations**

I. Synopsis	= 10
II. Experiments	= 25
III. Viva voce	= 05
Total	= **40 marks**

4. PROMOTION AND AWARD OF GRADES

A student shall be declared PASS and eligible for getting grade in a course of B. Pharm. programme if he/she secures at least **50%** marks in that particular course including internal assessment. For example, to be declared as PASS and to get grade, the student has to secure a minimum of 50 marks for the total of 100 including continuous mode of assessment and end semester theory examination and has to

secure a minimum of 25 marks for the total 50 including internal assessment and end semester practical examination.

5. CARRY FORWARD OF MARKS

In case a student fails to secure the minimum 50% in any Theory or Practical course, then he/she shall reappear for the end semester examination of that course. However his/her marks of the Internal Assessment shall be carried over and he/she shall be entitled for grade obtained by him/her on passing.

6. IMPROVEMENT OF INTERNAL ASSESSMENT

A student shall have the opportunity to improve his/her performance only once in the Sessional exam component of the internal assessment. The re-conduct of the Sessional exam shall be completed before the commencement of next end semester theory examinations

7. RE-EXAMINATION OF END SEMESTER EXAMINATIONS

Reexamination of end semester examination shall be conducted as per the schedule given in table 3. The exact dates of examinations shall be notified from time to time.

Table-3: Tentative schedule of end semester examinations

Semester	For Regular Candidates	For Failed Candidates
I, III, V and VII	November / December	May / June
II, IV, VI and VIII	May / June	November / December

Question paper pattern for end semester theory examinations

For 75 marks paper

I. Multiple Choice Questions(MCQs)

(Answer all the questions) = 20 x 1 = 20

I. Long Answers (Answer 2 out of 3) = 2 x 10 = 20

II. Short Answers (Answer 7 out of 9) = 7 x 5 = 35

Total = 75 marks

For 50 marks paper

I. Long Answers (Answer 2 out of 3) = 2 x 10 = 20

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

II. Short Answers (Answer 6 out of 8)	=	6 x 5 = 30

Total	=	50 marks

For 35 marks paper

I. Long Answers (Answer 1 out of 2)	=	1 x 10 =10
II. Short Answers (Answer 5 out of 7)	=	5 x 5 = 25

Total	=	35 marks

Question paper pattern for end semester practical examinations

I. Synopsis	=	5
II. Experiments	=	25
III. Viva voce	=	5

Total	=	35 marks

8. ACADEMIC PROGRESSION:

Academic progression rules are applicable as follows:

A student shall be eligible to carry forward all the courses of I, II, and III semesters till the IV semester examinations. However, he/she shall not be eligible to attend the courses of V semester until all the courses of I and II semesters are successfully completed.

A student shall be eligible to carry forward all the courses of III, IV and V semesters till the VI semester examinations. However, he/she shall not be eligible to attend the courses of VII semester until all the courses of I, II, III and IV semesters are successfully completed.

A student shall be eligible to carry forward all the courses of V, VI and VII semesters till the VIII semester examinations. However, he/she shall not be eligible to get the course completion certificate until all the courses of I, II, III, IV, V and VI semesters

are successfully completed.

A student shall be eligible to get his/her CGPA upon successful completion of the courses of I to VIII semesters within the stipulated time period as per the norms specified in 10.

A lateral entry student shall be eligible to carry forward all the courses of III, IV and V semesters till the VI semester examinations. However, he/she shall not be eligible to attend the courses of VII semester until all the courses of III and IV semesters are successfully completed.

A lateral entry student shall be eligible to carry forward all the courses of V, VI and VII semesters till the VIII semester examinations. However, he/she shall not be eligible to get the course completion certificate until all the courses of III, IV, V and VI semesters are successfully completed.

A lateral entry student shall be eligible to get his/her CGPA upon successful completion of the courses of III to VIII semesters within the stipulated time period as per the norms specified in 10.

Any student who has given more than 4 chances for successful completion of I / III semester courses and more than 3 chances for successful completion of II / IV semester courses shall be permitted to attend V / VII semester classes ONLY during the subsequent academic year as the case may be. In simpler terms there shall NOT be any ODD BATCH for any semester.

Note: Grade AB should be considered as failed and treated as one head for deciding academic progression. Such rules are also applicable for those students who fail to register for examination(s) of any course in any semester.

9. GRADING OF PERFORMANCES

9.1. Letter grades and grade points allocations:

Based on the performances, each student shall be awarded a final letter grade at the end of the semester for each course. The letter grades and their corresponding grade

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

points are given in Table – 4.

Table – 4: Letter grades and grade points equivalent to Percentage of marks and performances

Percentage of Marks Obtained	Letter Grade	Grade Point	Performance
90.00 – 100	O	10	Outstanding
80.00 – 89.99	A	9	Excellent
70.00 – 79.99	B	8	Good
60.00 – 69.99	C	7	Fair
50.00 – 59.99	D	6	Average
Less than 50	F	0	Fail
Absent	AB	0	Fail

A learner who remains absent for any end semester examination shall be assigned a letter grade of AB and a corresponding grade point of zero. He/she should reappear for the said evaluation/examination in due course.

9.2. The Semester grade point average (SGPA)

The performance of a student in a semester is indicated by a number called 'Semester Grade Point Average' (SGPA). The SGPA is the weighted average of the grade points obtained in all the courses by the student during the semester. For example, if a student takes five courses(Theory/Practical) in a semester with credits C1, C2, C3, C4 and C5 and the student's grade points in these courses are G1, G2, G3, G4 and G5, respectively, and then students' SGPA is equal to:

$$SGPA = \frac{C_1G_1 + C_2G_2 + C_3G_3 + C_4G_4 + C_5G_5}{C_1 + C_2 + C_3 + C_4 + C_5}$$

The SGPA is calculated to two decimal points. It should be noted that, the SGPA for any semester shall take into consideration the F and AB grade awarded in that semester. For example if a learner has an F or AB grade in course 4, the SGPA shall then be computed as:

$$SGPA = \frac{C_1G_1 + C_2G_2 + C_3G_3 + ZERO + C_5G_5}{C_1 + C_2 + C_3 + C_4 + C_5}$$

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

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9.3. Cumulative Grade Point Average (CGPA)

The CGPA is calculated with the SGPA of all the VIII semesters to two decimal points and is indicated in final grade report card/final transcript showing the grades of all VIII semesters and their courses. The CGPA shall reflect the failed status in case of F grade(s), till the course(s) is/are passed. When the course(s) is/are passed by obtaining a pass grade on subsequent examination(s) the CGPA shall only reflect the new grade and not the fail grades earned earlier. The CGPA is calculated as:

$$\text{CGPA} = \frac{C_1S_1 + C_2S_2 + C_3S_3 + C_4S_4 + C_5S_5 + C_6S_6 + C_7S_7 + C_8S_8}{C_1 + C_2 + C_3 + C_4 + C_5 + C_6 + C_7 + C_8}$$

where $C_1, C_2, C_3, \ldots$ is the total number of credits for semester I,II,III,.... and $S_1, S_2, S_3, \ldots$ is the SGPA of semester I,II,III..... .

9.4. Declaration of class

Although the GPA system is a stand-alone system of grading not amenable to facile conversion to percent marks, in general the conversion of CGPA to percent marks is: CGPA x 9.5 = Percent marks.

The class shall be awarded on the basis of CGPA as follows:

First Class with Distinction	= CGPA of. 7.37 and above
First Class	= CGPA of 6.32 to 7.36
Second Class	= CGPA of 6.00 to 6.31

9.5. Project work

The internal and external examiner appointed by the college but approved by the Board of Studies for Pharmacy shall evaluate the project at the time of the Practical examinations of other semester(s). Students shall be evaluated in groups for four hours (i.e., about half an hour for a group of five students). The projects shall be evaluated as per the criteria given below.

Evaluation of Dissertation Book:

Objective(s) of the work done	15 Marks
Methodology adopted	20 Marks
Results and Discussions	20 Marks
Conclusions and Outcomes	20 Marks
TOTAL	**75 Marks**

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

Evaluation of Presentation:

Presentation of work	25 Marks
Communication skills	20 Marks
Question and answer skills	30 Marks
TOTAL	75 Marks

Explanation: The 75 marks assigned to the dissertation book shall be same for all the students in a group. However, the 75 marks assigned for presentation shall be awarded based on the performance of individual students in the given criteria

9.6. Industrial training (Desirable)

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

9.7. Practice School

In the VII semester, every candidate shall undergo practice school for a period of 150 hours evenly distributed throughout the semester. The student shall opt any one of the domains for practice school declared by the program committee from time to time.

At the end of the practice school, every student shall submit a printed report (in triplicate) on the practice school he/she attended (not more than 25 pages). Along with the exams of semester VII, the report submitted by the student, knowledge and skills acquired by the student through practice school shall be evaluated by the subject experts at college level and grade point shall be awarded. The credits assigned for Practice School is **6** credits.

9.8. Award of degree

Candidates who fulfill the requirements mentioned above shall be eligible for award of degree during the ensuing convocation.

10. Duration for completion of the program of study

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

The duration for the completion of the program shall be fixed as per the norms of the University of Mumbai

11. Re-admission after break of study

Candidate who seeks re-admission to the program after break of study has to get the approval from the university by paying a condonation fee.

12. Program Committee

1. The B. Pharm. program shall have a Program Committee constituted by the Head of the institution in consultation with all the Heads of the departments.

2. The composition of the Program Committee shall be as follows: A senior teacher shall be the Chairperson; One Teacher from each department handling B.Pharm courses; and four student representatives of the program (one from each academic year), nominated by the Head of the institution.

3. Duties of the Program Committee:

i. Periodically reviewing the progress of the classes.

ii. Discussing the problems concerning curriculum, syllabus and the conduct of classes.

iii. Discussing with the course teachers on the nature and scope of assessment for the course and the same shall be announced to the students at the beginning of respective semesters.

iv. Communicating its recommendation to the Head of the institution on academic matters.

v. The Program Committee shall meet at least thrice in a semester preferably at the end of each Sessional exam (Internal Assessment) and before the end semester exam.

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

SCHEME AND SYLLABUS

for

CHOICE BASED CREDIT SYSTEM

for

Undergraduate Programme

(Bachelor of Pharmacy, B. Pharm.)

in

PHARMACY

Revised Course (Revised 2019)

from the academic year 2019-2020

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
	Total	**30**	**6**	**30**

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
	Total	**28**	**5**	**24**

* Non University Examination (NUE)

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 Herbals			
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[$]/30[//]
II	29
III	26
IV	28
V	26
VI	26
VII	24
VIII	22
Extracurricular/ Co curricular activities	01*
Total credit points for the program	209/211[$]/212[//]

* 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.

[$]Applicable ONLY for the students studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics course.

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

University of Mumbai

No. UG/ [illegible] 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/[illegible] of 2018-19 dated 7th December, 2018 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 14th June, 2019 have been accepted by the Academic Council at its meeting held on 26th 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) shall be given effect from the academic year 2019-20, accordingly.

(The same is available on the University website: www.mu.ac.in)

(Dr. Ajay Deshmukh)
REGISTRAR

MUMBAI – 400 032
14th August, 2019

To

The Principals of the affiliated Colleges and Directors of the recognized Institutions in Science & Technology Faculty (Circular No. UG/[illegible] of 2017-18 dated 6th June, 2018).

A.C/4.38/26/07/2019

MUMBAI-400 032
14th August, 2019

No. UG/ 65 -A of 2019-20

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

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Mumbai
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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 (Pharmaceutics)
2	Eligibility for Admission	B. Pharm / PharmD
3	Passing Marks	50%
4	Evaluation System (Semester / Annual)	2 (Sem) 2 Yrs / 2 (Sem) 3 years
5	Level	P.G. / ~~U.G.~~ / Diploma / ~~Certificate~~ (Strike out which is not applicable)
6	Pattern	Yearly / ~~Semester~~ (Strike out which is not applicable)
7	Status	~~New~~ / Revised (Strike out which is not applicable)
8	To be implemented from Academic Year	From Academic Year 2019-20

Name of BOS Chairperson / Dean: Rajendra Mane PhD

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

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Chembur
Mumbai
400 074.
INDIA

UNIVERSITY OF MUMBAI

Manual on

CHOICE BASED CREDIT SYSTEM

for

Postgraduate Program

(Master of Pharmacy, M. Pharm.)

in

PHARMACY

Revised Course (Revised 2019)

(from the academic year 2019–2020)

1

INTRODUCTION

RECOMMENDATIONS OF NATIONAL REGULATORY AUTHORITIES

The University Grants Commission (UGC), the **National Assessment and Accreditation Council (NAAC)**, the **Distance Education Council (DEC)** and the **National Knowledge Commission (NKC)** have time and again come out with recommendations for improving the quality and effectiveness of Higher education provisions in the country. The ministry of Human Resource Development at the Central level and the Ministry of Higher & Technical Education, Govt. of Maharashtra have also repeatedly stressed on the need for universities to pay prompt attention to improve the quality of education. The **National Knowledge Commission (NKC)**, in its report to the Prime Minister on 29th November 2006) has also reiterated the importance of higher education and the contribution it has made to economic development, social progress and political democracy in independent India.

An important concern voiced more strongly in recent times, is the need to develop a Choice-Based Credit System (CBCS) in tune with global trends and the adoption of a sound grading system for reflecting learner performance. This is in line with the **recommendation of the UGC** in its *Action Plan for Academic and Administrative Reforms* (Ref. UGC letters January 2008; March 2009) "……. *Curricular flexibility and learners' mobility are issues that warrant our urgent attention. These can be addressed by introducing credit based courses and credit accumulation. In order to provide with some degree of flexibility to learners, we need to provide flexibility in course selection and also a minimum as well as a maximum permissible span of time in which a course can be completed by a learner… The Choice-Based Credit System (CBCS) imminently fits into the emerging socioeconomic milieu, and could effectively respond to the educational and occupational aspirations of the upcoming generations. In view of this, institutions of higher education in India would do well to invest thought and resources into introducing CBCS. Aided by modern communication and information technology, CBCS has a high probability to be operationalized efficiently and effectively — elevating learners, institutions and higher education system in the country to newer heights…*".

RATIONALE FOR INTRODUCTION OF CREDIT AND GRADING SYSTEM

The UGC while outlining the several unique features of the Choice-Based Credit System (CBCS) has, in fact, given in a nutshell, the rationale for its introduction. Among the features

highlighted by the UGC are: *Enhanced learning opportunities, ability to match learners' scholastic needs and aspirations, inter-institution transferability of learners (following the completion of a semester), part-completion of an academic programme in the institution of enrolment and part-completion in a specialized (and recognized) institution, improvement in educational quality and excellence, flexibility for working learners to complete the programme over an extended period of time, standardization and comparability of educational programmes across the country, etc.*

This Choice Based Credit System enables a much-required shift in focus from teacher-centric to learner-centric education since the workload estimated is based on the investment of time in learning, not in teaching. It also focuses on continuous evaluation which will enhance the quality of education. It can be concluded from the above discussion that it is very much essential to implement the Choice Based Credit System in higher education in India. Course credit structure, examination/assessment and grading are mainly focused aspects of this manual and discussed in subsequent chapters.

DIRECTIVES OF PHARMACY COUNCIL OF INDIA

The Pharmacy Council of India (PCI) in exercise of the powers conferred to it under the sections 10 and 18 of the Pharmacy Act 1948 (8 of 1948), with the approval of the Central Government, had made the Bachelor of Pharmacy (B. Pharm.) Course Regulations, 2014 and Master of Pharmacy (M. Pharm.) Course regulations vide Gazette dated December 10, 2014. Further as per regulations 6 and 8 of the above course regulations the PCI has also prescribed the Rules and Syllabus for B. Pharm. course and Scheme and Syllabus for M. Pharm., its letter Ref 14-136/2016-PCI and Ref 14-154/2015 PCI dated December 21, 2016, with the subject heading "Statutory Scheme/Rules and syllabus for B. Pharm and M. Pharm. courses". It is thus mandatory to implement the directives of PCI with regard to the Rules/Regulations/Syllabus for recognition and extension of approval of B. Pharm. and M. Pharm. programs of institutes/Universities by the PCI

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

1. ADMISSION CRITERIA

Admission to the M. Pharm. program of University of Mumbai is governed by the rules and regulations of University of Mumbai and as per norms of the Govt. of Maharashtra through State CET Cell and the Directorate of Technical Education (DTE) and the All India Council for Technical Education (AICTE, New Delhi) in force at the time of admission and as amended from time to time.

In general, a learner who has passed the examination for the B. Pharm. Degree from All India Council for Technical Education or Pharmacy Council of India or Central or State Government approved institutions, with at least **55 %** marks (at least **50%** marks in case of SC or ST category and persons with disability belonging to Maharashtra state only.) and obtained Score in Graduate pharmacy Aptitude Test conducted by All India Council of Technical Education may be admitted to the M. Pharm. Program (Partly by Papers and Partly by Research). However, the rules/regulations and qualifications for admission be those in effect at the day and time of admission.

2. COURSE STRUCTURE

2.1 Duration of the program

The program of study for M. Pharm. shall extend over a period of four semesters (two academic years). The medium of instruction shall be English.

2.2 Working days in each semester

Each semester shall consist of not less than 100 working days. The odd semesters shall be conducted from the month of July to November/December and the even semesters shall be conducted from the month of December/January to May/June in every calendar year.

As the requirements for a particular degree (undergraduate or postgraduate), a certain quantum of academic work measured in terms of credits is laid down in general. Learner earns credits every semester by satisfactorily clearing courses/other academic activities. The amount of credit associated with a course is dependent upon the number of hours of instruction per week in that course. Similarly, the credit associated with any of the other activities is dependent upon the quantum of work expected to be put in for each of the other activity per week.

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

2.3 Attendance and progress

According to ordinance O.6086 (repealing O.119, O.120 and O.125), it is mandatory for every learner to have minimum 50% attendance for each course and average attendance of all the courses together has to be 75% in each semester. The candidate shall complete the prescribed course satisfactorily to be eligible to appear for the respective examinations.

2.4 Credit assignment

2.4.1 Theory and Laboratory courses

Courses are broadly classified as Theory and Practical. Theory courses consist of lecture (L) and Practical (P) courses consist of hours spent in the laboratory. Credits (C) for a course is dependent on the number of hours of instruction per week in that course and is obtained by using a multiplier of one (1) for lecture and a multiplier of half (1/2) for practical (laboratory) hours. Thus, for example, a theory course having four lectures per week throughout the semester carries a credit of 4. Similarly, a practical having four laboratory hours per week throughout semester carries a credit of 2.

The contact hours of seminars, assignments and research work shall be treated as that of practical courses for the purpose of calculating credits. i.e., the contact hours shall be multiplied by 1/2. Similarly, the contact hours of journal club, research work presentations and discussions with the supervisor shall be considered as theory course and multiplied by1.

2.5 Minimum credit requirements

The minimum credit points required for the award of M. Pharm. degree is **95**. However, based on the credit points earned by the students under the head of co-curricular activities, a student shall earn a maximum of **100** credit points. These credits are divided into Theory courses, Practical, Seminars, Assignments, Research work, Discussions with the supervisor, Journal club and Co-Curricular activities over the duration of four semesters. The credits are distributed semester-wise as shown in Table 13. Courses generally progress in sequence, building competencies and their positioning indicates certain academic maturity on the part of the learners. Learners are expected to follow the semester-wise schedule of courses given in the syllabus.

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

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3. ACADEMIC WORK

A regular record of attendance both in Theory, Practical, Seminar, Assignment, Journal club, Discussion with the supervisor, Research work presentation and Dissertation shall be maintained by the department / teaching staff of respective courses.

4. COURSE OF STUDY

The specializations in M. Pharm program is given in Table 1.

Table – 1: List of M. Pharm. Specializations and their Code

S. No.	Specialization	Code
1.	Pharmaceutics	MPH
2.	Industrial Pharmacy	MIP
3.	Pharmaceutical Chemistry	MPC
4.	Pharmaceutical Analysis	MPA
5.	Pharmaceutical Quality Assurance (Quality Assurance)	MQA
6.	Pharmaceutical Regulatory Affairs	MRA
7.	Pharmaceutical Biotechnology	MPB
8.	Pharmacy Practice	MPP
9.	Pharmacology	MPL
10.	Pharmacognosy (Pharmacognosy and Phytochemistry)	MPG

The course of study for M. Pharm. specializations shall include Semester wise Theory & Practical as given in Tables – 2 to 11. The number of hours to be devoted to each theory and practical course in any semester shall not be less than that shown in Table – 2 to 11.

Table – 2: Course of study for M. Pharm. (Pharmaceutics)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
	Semester I				
MPH101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPH102T	Drug Delivery System	4	4	4	100
MPH103T	Modern Pharmaceutics	4	4	4	100
MPH104T	Regulatory Affair	4	4	4	100
MPH105P	Pharmaceutics Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
	Total	**35**	**26**	**35**	**650**
	Semester II				
MPH201T	Molecular Pharmaceutics (Nano Tech and Targeted DDS)	4	4	4	100
MPH202T	Advanced Biopharmaceutics& Pharmacokinetics	4	4	4	100
MPH203T	Computer Aided Drug Delivery System	4	4	4	100
MPH204T	Cosmetic and Cosmeceuticals	4	4	4	100
MPH205P	Pharmaceutics Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
	Total	35	26	35	650

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

Table – 4: Course of study for M. Pharm. (Pharmaceutical Chemistry)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
	Semester I				
MPC101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPC102T	Advanced Organic Chemistry -I	4	4	4	100
MPC103T	Advanced Medicinal chemistry	4	4	4	100
MPC104T	Chemistry of Natural Products	4	4	4	100
MPC105P	Pharmaceutical Chemistry Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650
	Semester II				
MPC201T	Advanced Spectral Analysis	4	4	4	100
MPC202T	Advanced Organic Chemistry -II	4	4	4	100
MPC203T	Computer Aided Drug Design	4	4	4	100
MPC204T	Pharmaceutical Process Chemistry	4	4	4	100
MPC205P	Pharmaceutical Chemistry Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
	Total	35	26	35	650

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

Table – 6: Course of study for M. Pharm. (Pharmaceutical Quality Assurance or Quality Assurance)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
	Semester I				
MQA101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MQA102T	Quality Management System	4	4	4	100
MQA103T	Quality Control and Quality Assurance	4	4	4	100
MQA104T	Product Development and Technology Transfer	4	4	4	100
MQA105P	Pharmaceutical Quality Assurance Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
	Total	35	26	35	650
	Semester II				
MQA201T	Hazards and Safety Management	4	4	4	100
MQA202T	Pharmaceutical Validation	4	4	4	100
MQA203T	Audits and Regulatory Compliance	4	4	4	100
MQA204T	Pharmaceutical Manufacturing Technology	4	4	4	100
MQA205P	Pharmaceutical Quality Assurance Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
	Total	35	26	35	650

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

Table – 12: Course of study for M. Pharm. III and IV Semesters
(Common for All Specializations)

Course Code	Course	Credit Hours	Credit Points
MRM301T	Research Methodology and Biostatistics*	4	4
-	Journal club	2	2
-	Discussion / Presentation (Proposal Presentation)	5	5
-	Research Work	30	30
	Total	**41**	**41**

* Non University Exam

Table – 13: Semester wise credits distribution

Semester	Credit Points
I	26
II	26
III and IV	41
Co-curricular Activities (Attending Conference, Scientific Presentations and Other Scholarly Activities)	Minimum=02 Maximum=07*
Total Credit Points	Minimum=95 Maximum=100*

*Credit Points for Co-curricular Activities

Table – 14: Guidelines for Awarding Credit Points for Co-curricular Activities

Name of the Activity	Maximum Credit Points Eligible / Activity
Participation in National Level Seminar/Conference/Workshop/Symposium/ Training Programs (related to the specialization of the student)	01
Participation in international Level Seminar/Conference/Workshop/Symposium/ Training Programs (related to the specialization of the student)	02
Academic Award/Research Award from State Level/National Agencies	01
Academic Award/Research Award from International Agencies	02
Research / Review Publication in National Journals (Indexed in Scopus / Web of Science)	01
Research / Review Publication in International Journals (Indexed in Scopus /Web of Science)	02

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

*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.

5. Program Committee

1. The M. Pharm. programme shall have a Programme Committee constituted by the Head of the institution in consultation with all the Heads of the departments.

2. The composition of the Programme Committee shall be as follows:
A teacher at the cadre of Professor shall be the Chairperson; One Teacher from each M. Pharm specialization and four student representatives (two from each academic year), nominated by the Head of the institution.

3. Duties of the Programme Committee:
   i. Periodically reviewing the progress of the classes.
   ii. Discussing the problems concerning curriculum, syllabus and the conduct of classes.
   iii. Discussing with the course teachers on the nature and scope of assessment for the course and the same shall be announced to the students at the beginning of respective semesters.
   iv. Communicating its recommendation to the Head of the institution on academic matters.
   v. The Programme Committee shall meet at least twice in a semester preferably at the end of each sessional exam and before the end semester exam.

6. Examinations/Assessments

The schemes for internal assessment and end semester examinations are given in Tables – 15 to 25.

Dr. (Mrs.) Supriya 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 Mumbaicircular No. Exam./Thesis/Univ./VCD/947 of 2018 and/ or guidelines/ordinances published from time to time
3.	Duration of Ph.D.(Tech.) in PharmaceuticalSciencesProgramme	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 2018and/ 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**

Vivekanand Education Society's College of Pharmacy Chembur Mumbai 400 074. INDIA

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

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

1. Preamble

The University of Mumbai offers research programmes in different subjects and in interdisciplinary areas under the various faculties leading to the degree of Doctor of Philosophy (Ph.D.). The Course work in Ph.D. is mandatory for all candidates admitted for the Ph.D. Programme at the University of Mumbai.

The Ph.D.(Tech) Program in Pharmaceutical Sciences University of Mumbai has a mission to develop high quality scientific specialists having strong base of principles of Pharmaceutical sciences and the scientific methods, deep understanding of their chosen areas of specialization, the motivation to learn continually, interact with multi- disciplinary groups and to handle new challenges offered by the front-end technologies.

The Ph.D. (Tech) course work in Pharmaceutical Sciences shall consist of the following papers:

- **Ph.D. C 101 : Research Methodology**
- **Ph.D. C102: Biostatistics**
- **Ph.D. C103: Subject Specific Course**
- **Ph.D.C104 : Subject Specific Course**
- **Ph.D.C105 : Research & Publication Ethics**

Research Methodology paper is designed to provide the candidate with a solid foundation and prepare him/her for the actual Ph.D. Research work.

The essence the goal of Biostatistics is to disentangle the data received and make valid inferences. Subject specific course work will enhance the knowledge of the research student in the core area ofspecialization.

Candidates can also opt for topics from various online courses available in SWAYAM and related platforms and get benefit of credit transfer. Hence, a good degree of flexibility and options have been provided in the course work to enable candidates to choose topics most relevant to their research area.

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

The Ph.D. course work is designed to impart knowledge and consolidate concepts and intellectual skills through courses which help the scholars to develop the capacity for free and objective enquiry, courage and integrity, awareness and sensitivity to the needs and aspirations of the society. The course work provides the candidates an enabling research experience thus helping them to enter their professional life with right perspective and knowledge related to their respective fields of specialization.

It is envisaged that the overall Ph.D. course work in Pharmaceutical scienceswill provide the necessary ground work and prepare the candidate to successfully take up the subsequent Ph.D. research work.

Ad Hoc Board of Studies in Pharmacy

Dr. AnuradhaMajumdar	Dean	Science & Technology
DrSupriyaShidhaye	(Chairman)	
DrShreerang Joshi	(Member)	
Prof K G Akamanchi.	(Member)	
Dr Krishna Iyer	(Member)	
Dr Mohan Kale	(Member)	
DrRajaniAthawale	(Member)	
DrMeenaKanyalkar	(Member)	

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

2. Branches of Ph.D. in Pharmaceutical Sciences:

- Pharmaceutics
- Pharmaceutical Chemistry
- Pharmacology
- Pharmacognosy
- Pharmaceutical Analysis
- Quality Assurance

3. Ph.D. (Tech) Course Work Structure (Faculty: Pharmaceutical Sciences)

Credit requirements, number, duration, syllabus, minimum standards for completion, etc. for Ph.D.Tech (Pharmaceutical Sciences) program shall be as under

- Ph.D. (Tech)course work shall be of 14 credits out of which 12 credits arerequired to be completed during the initial one or two semestersof the Ph.D. (Tech)programmeand completion of 2 credits of Research & Publication Ethicsis a pre-requisite and mandatory requirement for registration for Ph.D Tech.

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

- The 12 Credits to be completed before award of Ph.D Tech. Tech are divided further in such a way that 6 credits shall be assigned to Research methodology& Biostatistics which could cover areas such as quantitative methods, qualitative methods, computer applications & review of published research in the relevant field, training, field work, etc. The remaining 6 credits shall be distributed as 4 for advance course suggested by the guide from the syllabus of university of Mumbai for M Pharm program and 2 credits for coursework as per the recommendation by guide i.e. project work or adopting course from SWAYAM platform.
- 'Research and Publication Ethics' course of 2 credits is a mandatory requirement and is pre-requisite for registration for Ph.D.Tech. The courses from SWAYAM portal shall be explored for supplementary learning or for credit transfer for the course of 'Research and Publication Ethics'.
- All courses prescribed for Ph.D. (Tech)course work shall be conformity with the credit hour instructional requirement and shall specify content and instructional and assessment methods. They shall be duly approved by the respective Board of Studies.
- The courses shall be arranged in a formal way by the University through University Departments and also at identified institutions where experts in the areas of course work shall deliver requisite number of lectures. Record of attendance of the students shall be kept. The attendance of a candidate less than that prescribed by the University shall make the course null & void for the candidate
- The Department where the student pursues research shall prescribe the courses relevant to the student based on the recommendation of the Research Advisory Committee (RAC) of the research center.
- The course work may be completed either at the research Centre/s or University departments or premier institutions such as IIT, HBNI, BARC, TISS, ICSSR, TIFR, IIM etc. or fromSWAYAM Portal provided it is conducted in formal way.
- The grades in the course work. including research methodology courses shall be finalized after a combined assessment by the RAC and the Department and the final grades shall be communicated to the Head of Centre and to the University.

Dr. (Mrs.) Supriya S. Shidhaye
PRINCIPAL
Vivekanand Education Society's
College of Pharmacy
HAMC, Behind Collector Colon.,
Chembur, Mumbai - 400 0

- 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 inPharmaceutical 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
	Total	**14**	**14**	**70**	**280**	**350**

4. Syllabus for the Course Work Subjects:

Course Code	Course Name	Credits
Ph.DC101	**ResearchMethodology**	**04**

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

Table 1.3.2.2: Experiential learning to meet the course Outcomes, Gaps identified and to provide content Beyond the Syllabus (Year wise)

2020-21

Company/Activity	Year	Course Mapped	Course Code
Field work ACG capsule	2020-21	Computer Applications in Pharmacy (Practical)	BP210P
	2020-21	Computer Applications in Pharmacy (Theory)	BP205T
	2020-21	Environmental Sciences (Theory)	BP206T
	2020-21	Pharmaceutical Analysis I (Practical)	BP108P
	2020-21	Pharmaceutical Analysis I (Theory)	BP102T
	2020-21	Pharmaceutical Engineering (Practical)	BP308P
	2020-21	Pharmaceutical Engineering (Theory)	BP304T
	2020-21	Pharmaceutics I (Practical)	BP109P
	2020-21	Pharmaceutics I (Theory)	BP103T
	2020-21	Pharmaceutics II	BPH_C_502_T
	2020-21	Physical Pharmaceutics I (Practical)	BP306P
	2020-21	Physical Pharmaceutics I (Theory)	BP302T
	2020-21	Physical Pharmaceutics II (Practical)	BP407P
	2020-21	Physical Pharmaceutics II (Theory)	BP403T
Field work ACTREC	2020-21	Anatomy, Physiology & Pathophysiology I	BPH_C_103_T
	2020-21	Biochemistry I	BPH_C_104_T
	2020-21	Computer Applications in Pharmacy (Practical)	BP210P
	2020-21	Environmental Science	BPH_C_205_T
	2020-21	Experimental Techniques in Microbiology and Biotechnology Lab	BPH_C_507_L
	2020-21	General Chemistry	BPH_C_101_T
	2020-21	Mathematics and Statistics	BPH_C_406_T
	2020-21	Microbiology	BPH_C_405_T
	2020-21	Organic Chemistry I	BPH_C_301_T
	2020-21	Pathophysiology (Theory)	BP204T
	2020-21	Pharmaceutical Analysis I	BPH_C_304_T
	2020-21	Pharmacology I (Theory)	BP404T
	2020-21	Pharmacology III	BPH_C_704_T
Field work Anchrom	2020-21	Chemistry of Natural Products (Theory)	MPC104T
	2020-21	Modern pharmaceutical analytical Techniques (Theory)	MPC101T
	2020-21	Pharmaceutical Analysis II	BPH_C_603_T
	2020-21	Pharmaceutical Inorganic Chemistry (Theory)	BP104T
	2020-21	Pharmaceutical validation	MQA202T
	2020-21	Pharmaceutical Validation	MQA202T

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

	2020-21	Research Methodology and Biostatistics	MRM301T
	2020-21	Pharmaceutical Biotechnology	BPH_C_503_T
Internships			
BrandCare	2020-21	Pharmaceutical Management	BPH_E_608_T
Concept Pharmaceutical Ltd.	2020-21	Pharmaceutical Analysis II	BPH_C_603_T
Eumark	2020-21	Pharmaceutics II	BPH_C_502_T
IIT Kharagpur	2020-21	Pharmaceutics II	BPH_C_502_T
IMCD INDIA	2020-21	Modern Pharmaceutics (Theory)	MPH103T
INTERNSHALA	2020-21	Computer Lab	BPH_C_208_L
Janseen	2020-21	Pharmaceutics II	BPH_C_502_T
Glenmark	2020-21	Pharmaceutics II	BPH_C_502_T
IATRIS	2020-21	Pharmacology II	BPH_C_504_T
KEM Hospital	2020-21	Pharmacology II	BPH_C_504_T
Patanjali Pharma	2020-21	Modern Pharmaceutics (Theory)	MPH103T
Raptakos	2020-21	Pharmaceutics II	BPH_C_502_T
ViRACS Healthcare	2020-21	Product Development and Technology Transfer (Theory)	MQA104T
Zen Hospital	2020-21	Hospital Pharmacy and Drug Store Management	BPH_C_204_T
Project : Survey based	2020-21	Environmental Sciences (Theory)	BP206T
Field work : GastroPlus	2020-21	Biopharmaceutics and Pharmacokinetics	BPH_E_609_T
	2020-21	Computer Aided Drug Delivery System	MPH203T
	2020-21	Quality Control and Quality Assurance (Theory)	MQA103T
Field work IDME	2020-21	Audits and Regulatory Compliance	MQA203T
	2020-21	Computer Applications in Pharmacy (Theory)	BP205T
	2020-21	Intellectual Property Rights	BPH_E_709_T
	2020-21	Pharmaceutical Management	BPH_E_608_T
	2020-21	Regulatory Affair (Theory)	MPH104T
Journal Club Activity	2020-21	Basic Principles of Toxicology	BPH_E_610_T
	2020-21	Biopharmaceutics and Pharmacokinetics	BPH_E_609_T
	2020-21	Cosmeticology	BPH_E_512_T
	2020-21	Environmental Science	BPH_C_205_T
	2020-21	Microbiology	BPH_C_405_T
	2020-21	Pharmaceutics III	BPH_C_602_T
	2020-21	Pharmacognosy II	BPH_C_604_T
	2020-21	Pharmacology II	BPH_C_504_T
Field work LUBRIZOL	2020-21	Drug Delivery System (Theory)	MPH102T
	2020-21	Pharmaceutical Analysis I (Practical)	BP108P
	2020-21	Pharmaceutical Analysis I (Theory)	BP102T

Dr. (Mrs.) Supriya S. Shidhaye
PRINCIPAL
Vivekanand Education Society's
College of Pharmacy
HAMC, Behind Collector Colony,
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	2020-21	Pharmaceutical Engineering (Theory)	BP304T
	2020-21	Pharmaceutical Manufacturing Technology	MQA204T
	2020-21	Pharmaceutical Process Chemistry	MPC204T
	2020-21	Pharmaceutics I (Practical)	BP109P
	2020-21	Pharmaceutics I (Theory)	BP103T
	2020-21	Pharmaceutics I	BPH_C_403_T
	2020-21	Physical Pharmaceutics I (Practical)	BP306P
	2020-21	Physical Pharmaceutics I (Theory)	BP302T
Field work P&G	2020-21	Advanced Bio pharmaceutics & pharmacokinetics	MPH202T
	2020-21	Advanced Medicinal Chemistry (Theory)	MPC103T
	2020-21	Biopharmaceutics and Pharmacokinetics	BPH_E_609_T
	2020-21	Drug Delivery System (Theory)	MPH102T
	2020-21	Mathematics and Statistics	BPH_C_406_T
	2020-21	Modern Pharmaceutics (Theory)	MPH103T
	2020-21	Pharmaceutical Analysis I	BPH_C_304_T
	2020-21	Pharmaceutical Engineering	BPH_C_305_T
	2020-21	Pharmaceutical Excipients	BPH_E_613_T
	2020-21	Pharmaceutical Manufacturing Technology	MQA204T
	2020-21	Pharmaceutical Process Chemistry	MPC204T
	2020-21	Pharmaceutical process chemistry	MPC204T
	2020-21	Pharmaceutics I (Practical)	BP109P
	2020-21	Pharmaceutics I (Theory)	BP103T
	2020-21	Pharmaceutics I	BPH_C_403_T
	2020-21	Pharmaceutics II	BPH_C_502_T
	2020-21	Pharmaceutics III	BPH_C_602_T
	2020-21	Pharmaceutics Lab II	BPH_C_506_L
	2020-21	Pharmaceutics Laboratory I	BPH_C_408_L
	2020-21	Physical Pharmacy II	BPH_C_402_T
	2020-21	Physical Pharmacy Laboratory I	BPH_C_307_L
	2020-21	Physical Pharmacy Laboratory II	BPH_C_407_L
	2020-21	Preformulation Studies	BPH_E_711_T
	2020-21	Product Development and Technology Transfer (Theory)	MQA104T
	2020-21	Quality Control and Quality Assurance (Theory)	MQA103T
	2020-21	Quality Management System (Theory)	MQA102T
Project work	2020-21	Basic Principles of Toxicology	BPH_E_610_T
	2020-21	Clinical Pharmacy	BPH_E_807_T
	2020-21	Computer Lab	BPH_C_208_L
	2020-21	Cosmeticology	BPH_E_512_T
	2020-21	Experimental Techniques in Microbiology and Biotechnology Lab	BPH_C_507_L
	2020-21	Biotechnology Lab	BPH_C_507_L
	2020-21	Hospital Pharmacy and Drug Store Management	BPH_C_204_T

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

	2020-21	Novel Drug Delivery Systems	BPH_E_811_T
	2020-21	Pharmaceutical Analysis III	BPH_C_703_T
	2020-21	Pharmaceutical Chemistry III	BPH_C_801_T
	2020-21	Pharmaceutical Excipients	BPH_E_613_T
	2020-21	Pharmaceutical Management	BPH_E_608_T
	2020-21	Pharmaceutics IV	BPH_C_802_T
	2020-21	Pharmaceutics Lab IV	BPH_C_804_L
	2020-21	Pharmacognosy III	BPH_C_702_T
	2020-21	Pharmacology III	BPH_C_704_T
	2020-21	Research Project	PhdS104
	2020-21	Research Work	MRM304EW
Seminar	2020-21	Modern Pharmaceutics (Theory)	MPH103T
	2020-21	Pharmaceutical Process Chemistry	MPC204T
	2020-21	Product Development and Technology Transfer (Theory)	MQA104T

2019-20

Company/Activity	Year	Course Mapped	Course Code
Field Work : Visit to ACTREC	2019-20	Modern Analytical Techniques	MPH_C_104_T
	2019-20	Modern Pharm and Med. Chem.	MPH_C_101_T
	2019-20	Modern Pharmaceutics	MPH_C_102_T
	2019-20	Modern Pharmacology	MPH_C_103_T
Field Work : Visit to APTAR	2019-20	Pharmaceutical Manufacturing Technology	MQA204T
	2019-20	Pharmaceutical manufacturing technology	MQA204T
	2019-20	Product Development and Technology Transfer (Theory)	MQA104T
	2019-20	Quality Control and Quality Assurance (Theory)	MQA103T
	2019-20	Quality Management System (Theory)	MQA102T
Project : EVS Survey based project	2019-20	Environmental Sciences (Theory)	BP206T
Project : Journal Club Activity	2019-20	Basic Principles of Toxicology	BPH_E_610_T
	2019-20	Cosmeticology	BPH_E_512_T
	2019-20	Microbiology	BPH_C_405_T
	2019-20	Pharmaceutical Biotechnology	BPH_C_503_T
	2019-20	Pharmaceutical Chemistry I	BPH_C_601_T
	2019-20	Pharmaceutics III	BPH_C_602_T
	2019-20	Pharmacognosy II	BPH_C_604_T
	2019-20	Pharmacology II	BPH_C_504_T
Field Work : Visit to Maneesh Pharmaceuticals	2019-20	Dispensing and Community Pharmacy Lab	BPH_C_107_L
	2019-20	Dispensing and Community Pharmacy	BPH_C_102_T

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

	2019-20	Environmental Science	BPH_C_205_T
	2019-20	Hospital Pharmacy and Drug Store Management	BPH_C_204_T
	2019-20	Pharmaceutical Engineering	BPH_C_305_T
	2019-20	Physical Pharmacy I	BPH_C_302_T
Field Work : Visit to P&G	2019-20	Dispensing and Community Pharmacy	BPH_C_102_T
	2019-20	Drug Delivery System (Theory)	MPH102T
	2019-20	Mathematics and Statistics	BPH_C_406_T
	2019-20	Pharmaceutical Analysis I	BPH_C_304_T
	2019-20	Pharmaceutical Analysis Lab I	BPH_C_308_L
	2019-20	Pharmaceutical Engineering	BPH_C_305_T
	2019-20	Pharmaceutical Manufacturing Technology	MQA204T
	2019-20	Pharmaceutics I	BPH_C_403_T
	2019-20	Pharmaceutics Laboratory I	BPH_C_408_L
	2019-20	Physical Pharmacy I	BPH_C_302_T
	2019-20	Physical Pharmacy Laboratory I	BPH_C_307_L
Project Work	2019-20	Basic Principles of Toxicology	BPH_E_610_T
	2019-20	Cosmeticology	BPH_E_512_T
	2019-20	Experimental Techniques in Microbiology and Biotechnology Lab	BPH_C_507_L
	2019-20	Novel Drug Delivery Systems	BPH_E_811_T
	2019-20	Organic Chemistry II	BPH_C_401_T
	2019-20	Organic Chemistry Lab II	BPH_C_505_L
	2019-20	Pharmaceutical Analysis III	BPH_C_703_T
	2019-20	Pharmaceutical Analysis Lab III	BPH_C_707_L
	2019-20	Pharmaceutical Excipients	BPH_E_613_T
	2019-20	Pharmaceutical Management	BPH_E_608_T
	2019-20	Pharmaceutics IV	BPH_C_802_T
	2019-20	Pharmacognosy III	BPH_C_702_T
	2019-20	Pharmacology III	BPH_C_704_T
	2019-20	Research Project	PhdS104
	2019-20	Research Work	MPH_C_301_D MPH_C_401_D
Seminar Project	2019-20	Advanced Bio pharmaceutics & pharmacokinetics	MPH202T
	2019-20	Advanced Medicinal Chemistry (Theory)	MPC103T
	2019-20	Audits and Regulatory Compliance	MQA203T
	2019-20	Drug Delivery System (Theory)	MPH102T
	2019-20	Modern pharmaceutical analytical Techniques (Theory)	MPC101T
	2019-20	Modern Pharmaceutics (Theory)	MPH103T
	2019-20	Molecular pharmaceutics (Nano tech and targeted Drug Delivery System)	MPH201T
	2019-20	Pharmaceutical Manufacturing Technology	MQA204T
	2019-20	Pharmaceutical Validation	MQA202T

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PRINCIPAL
Vivekanand Education Society's
College of Pharmacy
HAMC, Hashu Advani Colony,
Chembur, Mumbai - 400 074.

	2019-20	Product Development and Technology Transfer (Theory)	MQA104T
	2019-20	Quality Management System (Theory)	MQA102T
	2019-20	Research Methodology and Biostatistics	MRM301T
Internship			
Akitstee Tech Pvt Ltd	2019-20	Computer Lab	BPH_C_208_L
ArbroEduShip	2019-20	Communication Skills and Ethics (NUES)	BPH_C_105_T
Artvaid	2019-20	Communication Skills and Ethics (NUES)	BPH_C_105_T
Cipla	2019-20	Drug Delivery System (Theory)	MPH102T
Dr. APJ Abdulkalam Foundation	2019-20	Communication Skills and Ethics (NUES)	BPH_C_105_T
Event culture	2019-20	Pharmaceutical Management	BPH_E_608_T
Muskurahat Foundation	2019-20	Communication Skills and Ethics (NUES)	BPH_C_105_T
Plunes tech. Pvt Ltd	2019-20	Hospital Pharmacy and Drug Store Management	BPH_C_204_T
Shadowlabs	2019-20	Communication Skills and Ethics (NUES)	BPH_C_105_T
Shine Project	2019-20	Pharmaceutical Management	BPH_E_608_T
World Youth Council	2019-20	Communication Skills and Ethics (NUES)	BPH_C_105_T

2018-19

Company/Activity	Year	Course Mapped	Course Code
Field Work : Visit to Anchrom	2018-19	Modern Analytical Techniques	MPH_C_104_T
	2018-19	Modern Pharm and Med. Chem.	MPH_C_101_T
	2018-19	Modern Pharmaceutics	MPH_C_102_T
	2018-19	Study of Natural Products	MPH_C_105_T
Field Work : Visit to Arihant Innochem	2018-19	Advanced Organic Chemistry	MPH_C_203_T
	2018-19	Advanced Pharmaceutical and Medicinal Chemistry	MPH_C_202_T
	2018-19	Modern Pharmaceutics	MPH_C_102_T
	2018-19	Pharmaceutical Quality Management	MPH_C_203_T
Project : EVS Survey based project	2018-19	Environmental Science	BPH_C_205_T
Project : Journal Club Activity	2018-19	Biopharmaceutics and Pharmacokinetics	BPH_E_609_T
	2018-19	Cosmeticology	BPH_E_512_T
	2018-19	Pharmaceutical Biotechnology	BPH_C_503_T
	2018-19	Pharmaceutical Chemistry I	BPH_C_601_T
	2018-19	Pharmaceutics III	BPH_C_602_T
	2018-19	Pharmacognosy II	BPH_C_604_T
	2018-19	Pharmacology II	BPH_C_504_T

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PRINCIPAL
Vivekanand Education Society's
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Project Work	2018-19	Research Project	PhdS103
	2018-19	Research Work	MPH_C_301_D MPH_C_401_D
Seminar Project	2018-19	Advanced Pharmaceutics – I	MPH_C_204_T
	2018-19	Advanced Pharmaceutics – II	MPH_C_205_T
	2018-19	Modern Analytical Techniques	MPH_C_104_T
	2018-19	Modern Pharm and Med. Chem.	MPH_C_101_T
	2018-19	Modern Pharmaceutics	MPH_C_102_T
	2018-19	Modern Pharmacology	MPH_C_103_T
	2018-19	Pharmaceutical Quality Management	MPH_C_203_T
	2018-19	Quality Assurance Systems	MPH_C_202_T
	2018-19	Seminar	PhdC102
	2018-19	Seminar	PhdS103
	2018-19	Study of Natural Products	MPH_C_105_T
Field Work : Visit to Wamanrao Rakthpedhi	2018-19	Anatomy, Physiology & Pathophysiology - II	BPH_C_201_T
	2018-19	Anatomy, Physiology & Pathophysiology I	BPH_C_103_T
	2018-19	Anatomy, Physiology & Pathophysiology Lab	BPH_C_108_L
	2018-19	Biochemistry - II	BPH_C_202_T
	2018-19	Biochemistry I	BPH_C_104_T
Internships			
Breach Candy Hospital Trust	2018-19	Hospital Pharmacy and Drug Store Management	BPH_C_204_T
Cipla	2018-19	Pharmaceutics - III	DPH13
Cipla	2018-19	Research Work	MPH_C_301_D MPH_C_401_D
Desai Pharma Distributors	2018-19	Hospital Pharmacy and Drug Store Management	BPH_C_204_T
Eastern Agencies Healthcare	2018-19	Hospital Pharmacy and Drug Store Management	BPH_C_204_T
Emami	2018-19	Cosmeticology	BPH_E_512_T
Emami	2018-19	Pharmaceutical Quality Management	DPQ-M4
Epigeneres	2018-19	Pharmaceutical Biotechnology	DAL09
Impulse Pharma	2018-19	Pharmaceutics - III	DPH13
Khemanand Pharma	2018-19	Pharmaceutics - III	DPH13
Krishna Medical Stores	2018-19	Hospital Pharmacy and Drug Store Management	DPH14
M. J. Biopharm	2018-19	Pharmaceutical Biotechnology	DAL09
Maneesh Pharmaceuticals	2018-19	Pharmaceutics - III	DPH13
Merck	2018-19	Cosmeticology	BPH_E_512_T
Merck	2018-19	Pharmaceutics - III	DPH13
Meyer Vitabiotics	2018-19	Cosmeticology	DPH11

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Vivekanand Education Society's
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Micro Labs	2018-19	Advanced Pharmaceutics – I	MPH_C_204_T
Micro Labs	2018-19	Advanced Pharmaceutics II	DPH-M3
P&G Health	2018-19	Pharmaceutics - III	DPH13
Palash Pharma	2018-19	Pharmaceutics - III	DPH13
PAR Formulations	2018-19	Pharmaceutics - III	DPH13
Pharma World Chemist & Druggist	2018-19	Hospital Pharmacy and Drug Store Management	BPH_C_204_T
Poster Club Activity	2018-19	Environmental Science	BPH_C_205_T
Poster Club Activity	2018-19	Hospital Pharmacy and Drug Store Management	BPH_C_204_T
Poster Club Activity	2018-19	Pharmaceutical Management	BPH_E_608_T
Raptakos	2018-19	Pharmaceutics III	BPH_C_602_T
Raptakos Brett & Co.	2018-19	Pharmaceutics - III	DPH13
Runa Chemicals	2018-19	Organic Chemistry-III	DPC12
Saifee Hospital	2018-19	Hospital Pharmacy and Drug Store Management	DPH14
Sandoz	2018-19	Pharmaceutics - III	DPH13
Shree Samarth Medical Stores	2018-19	Hospital Pharmacy and Drug Store Management	BPH_C_204_T
Shree Simba Chemist	2018-19	Hospital Pharmacy and Drug Store Management	BPH_C_204_T
Shree Simba Chemist	2018-19	Pharmaceutics - III	DPH13
Sitec Labs	2018-19	Nutraceuticals and Dietary Supplements	BPH_E_508_T
Sitec Labs	2018-19	Pharmaceutical Quality Management	MPH_C_203_T
Sitec Labs	2018-19	Pharmacognosy & Phytochemistry - I	DPG01
The Pharmaceutical Products of India	2018-19	Pharmaceutics - III	DPH13
ThermoFisher	2018-19	Biostatistics and Research Methodology	MPH_C_201_T
Thermofisher	2018-19	Biostatistics and Research Methodology	MPH_C_201_T
Thermofisher	2018-19	Pharmaceutical Quality Management	MPH_C_203_T

2017-18

Company/Activity	Year	Course Mapped	Course Code
Project : EVS Survey based project	2017-18	Environmental Science	BPH_C_205_T
Project : Journal Club Activity	2017-18	Basic Principles of Toxicology	BPH_E_610_T
	2017-18	Biopharmaceutics and Pharmacokinetics	BPH_E_609_T
	2017-18	Computer Lab	BPH_C_208_L
	2017-18	Pharmaceutical Analysis II	BPH_C_603_T
	2017-18	Pharmaceutical Biotechnology	BPH_C_503_T
	2017-18	Pharmaceutical Chemistry I	BPH_C_601_T
	2017-18	Pharmaceutics III	BPH_C_602_T
	2017-18	Pharmacology II	BPH_C_504_T
Poster Club Activity	2017-18	Environmental Science	BPH_C_205_T

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

Project Work	2017-18	Research Work	MPH_C_301_D MPH_C_401_D
Seminar Project	2017-18	Advanced Organic Chemistry	MPH_C_203_T
	2017-18	Advanced Pharmaceutical and Medicinal Chemistry	MPH_C_202_T
	2017-18	Advanced Pharmaceutics – I	MPH_C_204_T
	2017-18	Advanced Pharmaceutics – II	MPH_C_205_T
	2017-18	Modern Analytical Techniques	MPH_C_104_T
	2017-18	Modern Pharm and Med. Chem.	MPH_C_101_T
	2017-18	Modern Pharmaceutics	MPH_C_102_T
	2017-18	Modern Pharmacology	MPH_C_103_T
	2017-18	Pharmaceutical Quality Management	MPH_C_203_T
	2017-18	Study of Natural Products	MPH_C_105_T
Field Work : Visit to Wamanrao Rakthpedhi	2017-18	Anatomy, Physiology & Pathophysiology - II	BPH_C_201_T
	2017-18	Anatomy, Physiology & Pathophysiology I	BPH_C_103_T
	2017-18	Anatomy, Physiology & Pathophysiology Lab	BPH_C_108_L
	2017-18	Biochemistry - II	BPH_C_202_T
	2017-18	Biochemistry I	BPH_C_104_T
Internships			
Abbott	2017-18	Pharmaceutics - III	DPH13
Breach Candy Hospital Trust	2017-18	Hospital Pharmacy and Drug Store Management	DPH14
Cipla	2017-18	Pharmaceutical Quality Management	MPH_C_203_T
Cipla	2017-18	Pharmaceutics - III	DPH13
Emami	2017-18	Cosmeticology	DPH11
Ethicop Healthcare LPP	2017-18	Hospital Pharmacy and Drug Store Management	DPH14
Galentic Pharma	2017-18	Pharmaceutics - III	DPH13
Gautam Medical Center	2017-18	Hospital Pharmacy and Drug Store Management	DPH14
Glenmark	2017-18	Advanced Pharmaceutics – I	MPH_C_204_T
IPCA	2017-18	Pharmaceutical Quality Management	MPH_C_203_T
Maneesh Pharmaceuticals	2017-18	Pharmaceutics - III	DPH13
Medley Pharmaceuticals	2017-18	Pharmaceutics - III	DPH13
Merck	2017-18	Advanced Pharmaceutics – I	MPH_C_204_T
Merck	2017-18	Pharmaceutics - III	DPH13
Meyer Vitabiotics	2017-18	Cosmeticology	DPH11
Pharmachem Agency	2017-18	Hospital Pharmacy and Drug Store Management	DPH14
Sanjivani Parentral Ltd	2017-18	Pharmaceutics - III	DPH13
Shree Simba Chemist	2017-18	Hospital Pharmacy and Drug Store Management	DPH14

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

Sitec Lab	2017-18	Pharmacognosy & Phytochemistry - I	DPG01
Teva	2017-18	Organic Chemistry-III	DPC12
USV	2017-18	Organic Chemistry-III	DPC12
USV	2017-18	Pharmaceutics - III	DPH13
Vithai Pharmaceuticals	2017-18	Pharmaceutics - III	DPH13

2016-17

Company/Activity	Year	Course Mapped	Course Code
Field Visit to BARC	2016-17	Anatomy, Physiology and Pathophysiology - III	DPL04
	2016-17	Biochemistry - II	DPC06
	2016-17	Biochemistry Lab	DPC08
	2016-17	Microbiology	DAL06
	2016-17	Pharmaceutical Engineering	DAL04
	2016-17	Pharmaceutics - II	DPH09
	2016-17	Pharmaceutics Lab - II	DPH10
Seminar Project	2016-17	Advanced Organic Chemistry	MPH_C_203_T
	2016-17	Advanced Pharmaceutical and Medicinal Chemistry	MPH_C_202_T
	2016-17	Advanced Pharmaceutics – I	MPH_C_204_T
	2016-17	Advanced Pharmaceutics – II	MPH_C_205_T
	2016-17	Modern Analytical Techniques	MPH_C_104_T
	2016-17	Modern Pharm and Med. Chem.	MPH_C_101_T
	2016-17	Modern Pharmaceutics	MPH_C_102_T
	2016-17	Modern Pharmacology	MPH_C_103_T
	2016-17	Pharmaceutical Quality Management	MPH_C_203_T
	2016-17	Study of Natural Products	MPH_C_105_T
Internship			
Alkem	2016-17	Advanced Pharmaceutics – II	MPH_C_205_T
Ayurchem	2016-17	Pharmacognosy & Phytochemistry - I	DPG01
BARC	2016-17	Advanced Organic Chemistry	MPH_C_203_T
Breach Candy Hospital Trust	2016-17	Hospital Pharmacy and Drug Store Management	DPH14
Cipla	2016-17	Pharmaceutics - III	DPH13
Emami	2016-17	Cosmeticology	DPH11
FDC Ltd	2016-17	Pharmaceutics - III	DPH13
Galentic	2016-17	Pharmaceutics - III	DPH13
GANSON	2016-17	Advanced Pharmaceutics – I	MPH_C_204_T
GANSON	2016-17	Pharmaceutical Quality Management	MPH_C_203_T
Gelnova	2016-17	Pharmaceutics - III	DPH13
Glenmark	2016-17	Pharmaceutics - III	DPH13
Gopaldas Visram	2016-17	Pharmaceutics - III	DPH13
GSK	2016-17	Pharmaceutics - III	DPH13

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

Influx Healthcare	2016-17	Pharmaceutics - III	DPH13
IPCA	2016-17	Advanced Pharmaceutics – I	MPH_C_204_T
Lesanto Labs	2016-17	Pharmaceutics - III	DPH13
Maneesh Pharmaceuticals	2016-17	Pharmaceutics - III	DPH13
Meera Chemist & Druggist	2016-17	Hospital Pharmacy and Drug Store Management	DPH14
Merck	2016-17	Advanced Pharmaceutics – I	MPH_C_204_T
Merck	2016-17	Pharmaceutical Quality Management	MPH_C_203_T
Merck	2016-17	Pharmaceutics - III	DPH13
Meyer Vitabiotics	2016-17	Cosmeticology	DPH11
Micro Labs	2016-17	Research Project	DPM-M4
Navkar Medical	2016-17	Hospital Pharmacy and Drug Store Management	DPH14
Project Work	2016-17	Research Project	DPM-M4
Relicus Healthcare	2016-17	Pharmaceutics - III	DPH13
Rubicon	2016-17	Pharmaceutical Quality Management	MPH_C_203_T
Saiifee Hospital	2016-17	Hospital Pharmacy and Drug Store Management	DPH14
Sanjivani Parentral	2016-17	Pharmaceutics - III	DPH13
The Pharmaceutical Products of India	2016-17	Pharmaceutics - III	DPH13
THINQ Pharma	2016-17	Pharmaceutics - III	DPH13
USV	2016-17	Pharmaceutics - III	DPH13
Wanbury	2016-17	Organic Chemistry-III	DPC12
Watson Pharma	2016-17	Organic Chemistry-III	DPC12
Watson Pharma	2016-17	Pharmaceutical Biotechnology	DAL09

1.3.2.3. Link for detailed document as proof of experiential learning taken by Students (Click Here)

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