



Karmaveer Bhaurao Patil University, Satara
Faculty of Science & Technology
B. Sc. (Drug Chemistry)
Programme and Credit Structure as per NEP 2020

{Ref. Government of Maharashtra letter no. □□□□□.□□□□□/□□□□.□.□□/□□□□-□□□□□□□□□□□□□□:
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The degree shall be titled as 'Bachelor of Science [Drug Chemistry) under the faculty of Science and Technology

- B. Sc. Sem. I & II from Academic Year 2024-25**
- B. Sc. Sem. III & IV from Academic Year 2025-26**
- B. Sc. Sem. V & VI from Academic Year 2026-27**
- B. Sc. Sem. VII & VIII from Academic Year 2027-28**

Programme Outcomes for B. Sc. (Drug Chemistry)

Programme Outcomes	
PO. No.	After completing B.Sc. (Drug Chemistry) Programme the students will be able to.....
PO-1	Study the Classification of drugs.
PO-2	Recall amino acids and proteins.
PO-3	Develop skills in practical work, experiments, and laboratory materials.
PO-4	Detect functional group in given compounds.
PO-5	Gain Knowledge about mineral nutrition.
PO-6	Study fundamentals of Titration.
PO-7	Learn Chemical communication and human body.
PO-8	Analyze Drug absorption process.
PO-9	Examine drug metabolic pathways.
PO-10	Practice techniques for isolation and purification of organic solids.
PO-11	Explain the significance of partition coefficient in drug distribution.
PO-12	Understand the fundamental principles of enzyme structure and function.
PO-13	Investigate metabolic regulation.
PO-14	Enable the students to acquire knowledge of drugs and related subjects so as to apply them for the benefit of human beings.
PSO. NO	Programme Specific Outcomes The student will be able to...
PSO-1	Discuss and ask questions related to the different aspects of Drugs.
PSO-2	Perform experiments and projects related to Drug Chemistry.
PSO-3	Demonstrate drug metabolic process.
PSO-4	Evaluate the reaction efficiency and yield.
PSO-5	Understand the factors influencing drug stability.
PSO-6	Explain, describe and discuss the concepts of Toxicology.
PSO-7	Perform and design experiments related to purification of organic compounds.
PSO-8	Differentiate acidic and basic compounds.
PSO-9	Classify the amines.
PSO-10	Perform calculation to determine the amount of glycine present based on experimental data and stoichiometry.
PSO-11	Understand the applications of hygienic and antiseptic compounds in health care settings.
PSO-12	Extract oil from distillation methods.

Semester, Credit Framework, NSQF Level and Exit Points

Sr. No.	Semester	Year	Year	Credits	Level	Exit Points & Award
1	Sem. I& II	2024-25	1Year	44	4.5	UG Certificate in Drug Chemistry
2	Sem.III& IV	2025-26	2Year	88	5.0	UG Diploma in Drug Chemistry
3	Sem. V &VI	2026-27	3Year	132	5.5	B. Sc. in Drug Chemistry (UG Three Year Degree)
4	Sem.VII& VIII	2027-28	4Year	176	6.0	B. Sc. in Drug Chemistry [Honors/Research] (UG Four Year Degree)

Credit Distribution

Sr. No.	Course	3 Year Degree Programme			4 Year Honors Degree Programme			4 Year Honors with Research Degree Programme		
		Courses (3 Yr)	Credits (3 Yr)	%	Courses (4 Yr)	Credits (4 Yr)	%	Courses (4 Yr)	Credits (4 Yr)	%
1	Major	26	52	39.39	34	80	45.45	32	72	40.91
2	Elective	04	08	6.06	08	16	9.09	08	16	9.09
3	IKS	02	04	3.03	02	04	2.27	02	04	2.27
4	VSC	04	08	6.06	04	08	4.55	04	08	4.55
5	FP	01	02	1.52	01	02	1.14	01	02	1.14
6	OJT	01	04	3.03	02	08	4.55	01	04	2.27
7	RP	00	00	0.00	00	00	00	02	12	6.82
8	SEC	03	06	4.55	03	06	3.41	03	06	3.41
9	CEP	01	02	1.52	01	02	1.14	01	02	1.14
Total (Major) (A)		42	86	65.15	55	126	71.59	54	126	71.59
1	Minor & RM	12	24	18.18	13	28	15.91	13	28	15.91
Total (Minor) (B)		12	24	18.18	12	28	15.91	13	28	15.91
1	OE	04	08	6.06	04	08	4.55	04	08	4.55
2	AEC	04	08	6.06	04	08	4.55	04	08	4.55
3	VEC	02	04	3.03	02	04	2.27	02	04	2.27
4	CC	01	02	1.52	01	02	1.14	01	02	1.14
Total (C)		11	22	16.67	11	22	12.50	11	22	12.50
Grand Total (A+B+C)		65	132	100	79	176	100	78	176	100

Duration:

- The program shall be a full-time program.
- The duration of program shall be three years for Bachelor of Science and four years for Bachelor of Science with Honors or Bachelor of Science with Research.
- Every year students will have exist option with:
- (1st Year: Certificate, 2nd Year: Diploma, 3rd Year: Degree, 4th Year: Honors/ Research)
- These students are allowed to re-enter the degree program within three years and complete the degree program within the stipulated maximum period of Seven Years.

Eligibility: 12th Pass with Science, or equivalent.

Medium of Instruction: The medium of instructions shall be in English.

Scheme of Examination & Standard of Passing (CCE and ESE):

- End Semester Exam (ESE): 30 Marks (Min 12 Marks for Passing)
- Continuous Comprehensive Evaluation (CCE): 20 Marks (Min 08 Marks for Passing)
- Total Marks = 50 Marks
- Minimum 40% Marks Required for Passing and there is separate head of Passing for End

Semester Examination (ESE) and Continuous Comprehensive Evaluation (CCE).

- Scheme of Examination & Standard of Passing for ESE and CCE:
- As per the decision of the concern Board of Studies or Competent Authority.
- A candidate who acquire 32 credits or more during semester – I & II shall be admitted to B. Sc. II (appear for semester–III & IV examination).
- However the candidate shall not be admitted to B.Sc. III (Semester-V) unless he/she passed in all the subjects at B.Sc. I (Semester-I & Semester- II) and acquire 32 credits or more during semester – III & IV.
- However the candidate shall not be admitted to B. Sc. IV (Semester-VII) unless he/she passed in all the subjects at B. Sc. III (Semester-V & Semester-VI).
- However under the National Education Policy the rules extended by KBP University, time to time regarding ATKT will be applicable.

Eligibility of the Core Faculty:

- As per rules and regulations of Karmaveer Bhaurao Patil University, Satara and Govt. of Maharashtra.
- Eligibility for Professor of Practice or Professional Trainer:
Any other eligibility as per the guidelines and regulations passed by concern board of studies, academic council of the autonomous college and rules & regulations of Karmaveer Bhaurao Patil University, Satara and Government of Maharashtra and UGC norms.



Karmaveer Bhaurao Patil University, Satara
Yashavantrao Chavan Institute of Science, Satara
 (An Autonomous College)

B. Sc. (Drug Chemistry) Part-I

Semester I				
Sr. No.	Components	Course Code	Course	Credits
1	Course-I	BDCT 111	Introduction to Drug Chemistry (P-I)	02
2		BDCT 112	Fundamentals of Drug (P-II)	02
3		BDCP 113	Practical Based on BDCT 111 & BDCT 112 (Lab I)	02
4	Course-II	BDCT 114	Physical Chemistry (P-I)	02
5		BDCT 115	Inorganic Chemistry (P-II)	02
6		BDCP 116	Practical Based on BDCT 114 & BDCT 115 (Lab I)	02
7	Course-III	BDCT 117	Introduction to Instrumentation (P-I)	02
8		BDCT 118	Fundamentals of Instrumentation (P-II)	02
9		BDCP 119	Practical Based on BDCT 117 & BDCT 118 (Lab I)	02
10	OE	BDCTOE I	Indian Music Instruments	02
11	IKS	BDCTIKS I	Introduction to Indian Knowledge System	02
Total				22

Semester II

Sr. No.	Components	Course Code	Course	Credits
1	Course-I	BDCT 121	Introduction to Biochemistry (P-III)	02
2		BDCT 122	Analysis Techniques (P-IV)	02
3		BDCP 123	Practical Based on BDCT 121 & BDCT 122 (Lab-II)	02
4	Course-II	BDCT 124	Fundamental Organic Chemistry (P- III)	02
5		BDCT 125	Basic Analytical Chemistry (P-IV)	02
6		BDCP 126	Practical Based on BDCT 124 & BDCT 125 (Lab-II)	02
7	Course-III	BDCT 127	Fundamental Instrumentation for physics & chemistry (P- III)	02
8		BDCT 128	Fundamental Instrumentation for Electronics (P- IV)	02
9		BDCP 129	Practical Based on BDCT 127 & BDCT 128 (Lab-II)	02
10	OE	BDCTOE II	Music Studies P-II	02
11	VEC	BDCTIKS II	Democracy, Good Governance and Constitution of India	02
Total				22

EXIT OPTION: Award of UG Certificate in Major **with 44 credits** & an additional 4 credits core NSQF Course/Internship OR Continue with Major & Minor.

B. Sc. (Drug Chemistry) Part-II

Semester III				
Sr. No.	Components	Course Code	Course	Credits
1	Major	BDCT 231	Pharmacokinetics (P-V)	02
2		BDCT 232	Physicochemical Properties of Drugs (P-VI)	02

3		BDCP 233	Practical based on BDCT 231 & BDCT 232 (Lab-III)	02	
4	Minor	BDCT 234	Named Reactions and Reagents (P-V)	02	
5		BDCT 235	Inorganic Chemistry (P-VI)	02	
6		BDCP 236	Practical based on BDCT 234 & BDCT 235 (Lab-III)	02	
7	OE	BDCTOE III	Music Studies P-III	02	
8	VSC	BDCPVSC I	Synthesis of hygienic and antiseptic Compounds.	02	
9	SEC	BDCTSEC II	Purification techniques in Drug Chemistry.	02	
10	AEC	BDCTAEC I	English P-I	02	
11	IKS	BDCTIKS III	IKS P-III	02	
				Total	22

Semester IV

Sr. No.	Components	Course Code	Course	Credits	
1	Major	BDCT 241	Enzymes and metabolic processes (P-VII)	02	
2		BDCT 242	Spectroscopic Techniques (P-VIII)	02	
3		BDCP 243	Practical based on BDCT 241 & BDCT 242 (Lab-IV)	02	
4	Minor	BDCT 244	Organic Chemistry (P-VII, P-VIII, Lab-IV)	02	
5		BDCT 245	Analytical Chemistry (P-VIII)	02	
6		BDCP 246	Practical based on BDCT 241 & BDCT 242 (Lab-IV)	02	
7	OE	BDCTOE IV	Music Studies P-IV	02	
8	VSC	BDCPVSC II	Skin and hair care products.	02	
9	SEC	BDCTSEC III	Advanced Analytical Techniques.	02	
10	AEC	BDCTAEC II	English P-II	02	
11	VEC	BDCTVEC III	Role of values and ethics in Drug Chemistry.	02	
				Total	22

EXIT OPTION: Award of UG Diploma in Major and Minor with 88 Credits & an additional 4 credits core NSQF Course/ Internship OR Continue with Major & Minor

B. Sc. (Drug Chemistry) Part-III

Semester V

Sr. No.	Components	Course Code	Course	Credits	
1	Major	BDCT 351	Drug Design and Early Development (P-IX)	02	
2	Major	BDCT 352	Reaction Mechanisms, Reagents and Name Reactions (P-X)	02	
3	Major	BDCT 353	Natural Product (P-XI)	02	
4	Electives	BDCT 354 E1	Industrial Pharmacy (P-XIIE1)	02	
		BDCT 354 E2	Analytical Chemistry (P-XIIE2)		
5	Major Lab	BDCT 355	Practical Based on BDCT 351 & BDCT 352, 353 (Lab V)	02	
6	Elective Lab	BDCT 356	Practical Based on BDCT 354 E1 & BDCT 354 E2, (Lab VI)	02	
7	VSC	BDCTPVSC III	Advanced Analytical Techniques	02	
8	AEC	BDCTAEC III	English P-III	02	
9	OJT	BDCTOJT I	On Job Training in Drug Chemistry I	04	
10	CEP	BDCTCEP I	Community Engagement Programme in Drug Chemistry	02	
				Total	22

Semester VI

Sr.	Components	Course Code	Course	Credits
1	Major	BDCT 361	Therapeutic areas & its drugs (P-XIII)	02
2	Major	BDCT 362	Heterocyclic Drugs (P-XIV)	02

3	Major	BDCT 363	Herbal Drug Technology (P-XV)	02
4	Electives	BDCT 364 E1	Industrial Chemistry (P-XVIE1)	02
		BDCT 364 E2	Industrial Chemistry (P-XVIE2)	
5	Major Lab	BDCT 365	Practical Based on BDCT 351 & BDCT 352, 353 (Lab V)	02
6	Elective Lab	BDCT 366	Practical Based on BDCT 354 E1 & BDCT 354 E2, (Lab VI)	02
7	VSC	BDCTPVSC IV	Basic Microscopy and Centrifugation	02
8	SEC	BDCTAEC IV	AI in Drug Chemistry	02
9	FP	BDCTFP I	Field Project in Drug Chemistry	02
10	CC	BDCTCEP I	Co-curricular Course in Drug Chemistry	02
11	AEC	BDCTAEC IV	English P-IV	02
			Total	22
EXIT OPTION: Award of UG Degree in Major with 132 credits OR Continue with Major & Minor.				

B. Sc. (Drug Chemistry) Part-IV Honors Degree

Semester VII				
Sr. No.	Components	Course Code	Course	Credits
1	Major	BDCT 471	Introduction to Microbiology (P-XVII)	04
2	Major	BDCT 472	Fundamental Organic Chemistry (P-XVIII)	04
3	Major	BDCT 473	Coordination Chemistry (P-XIX)	04
4	Electives	BDCT 474 E1	Basics of Physical Chemistry (P-XXE1)	02
		BDCT 474 E2	Analytical Techniques (P-XXE2)	
5	Major Lab	BDCP 475	Practical Based on BDCT 471, BDCT 472, BDCT 473 (Lab – VII)	02
6	Elective Lab	BDCP 476	Practical Based on BDCT 475 E1 & BDCT475 E2 (Lab - III)	02
7	Minor	BDCT 477	Research Methodology	04
			Total	22
Semester VIII				
Sr.	Components	Course Code	Course	Credits
1	Major	BDCT 481	Immunology & Virology (P-XXI)	04
2	Major	BDCT 482	Reactive Intermediates and rearrangements (P-XXII)	04
3	Major	BDCT 483	Bio-inorganic Chemistry (P-XXIII)	04
4	Electives	BDCT 484 E1	Physicochemical theories and Equations (P-XXIVE1)	02
		BDCT 484 E2	Advanced Analytical Techniques (P-XXIVE2)	
5	Major Lab	BDCP 485	Practical Based on BDCT 481, BDCT 482, BDCT 483 (Lab – VIII)	02
6	Elective Lab	BDCP 486	Practical Based on BDCT 485 E1 & BDCT485 E2 (Lab - IV)	02
7	OJT	BDCTOJT 487	On Job Training in Drug Chemistry II	04
			Total	22
Award of Four year UG Honors Degree in Major and Minor with 176 credits.				

B. Sc. (Drug Chemistry) Part-IV Honors with Research Degree

Semester VII				
Sr. No.	Components	Course Code	Course	Credits
1	Major	BDCT 481	Introduction to Microbiology (P-XVII)	04
2	Major	BDCT 482	Fundamental Organic Chemistry (P-XVIII)	04
3	Electives	BDCT 483 E1	Basics of Physical Chemistry (P-XXE1)	04
		BDCT 483 E2	Analytical Techniques (P-XXE2)	
4	Major Lab	BDCP 484	Practical Based on BDCT 481, BDCT 482, (Lab – VIII)	02
5	Minor	BDCT 485	Research Methodology	04
6	RP	BDCP 486	Research Project in Drug Chemistry I	04
			Total	22
Semester VIII				
Sr. No.	Components	Course Code	Course	Credits
1	Major	BDCT 481	Immunology & Virology (P-XXI)	04
2	Major	BDCT 482	Reactive Intermediates and rearrangements (P-XXII)	04
3	Electives	BDCT 483 E1	Basics of Physical Chemistry (P-XXE1)	04
		BDCT 483 E2	Analytical Techniques (P-XXE2)	
4	Major Lab	BDCP 484	Lab – VIII	02
5	RP	BDCP 485	Research Project in Drug Chemistry II	08
			Total	22
Award of Four year UG Honors Degree in Major and Minor with 176 credits.				

Chairman
BoS in Drug Chemistry

Secretary
Academic Council

Chairman
Academic Council