



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

{Ref. Government of Maharashtra letter no. □□□□□.□□□□/□□□.□.□□/□□□□-□□□ □□ □□ □□□□□□: □□ □□□□ □□□□}

The degree shall be titled as 'Bachelor of Science (Physics) 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**

**Programme Outcomes for B. Sc. (Materials Science)**

PO. No.	Programme Outcomes After completing B. Sc. Programme the students will be able to.....
PO-1	graduate with proficiency in the subject.
PO-2	continue higher studies in his subject.
PO-3	pursue higher studies abroad.
PO-4	appear for the examinations for jobs in government organizations.
PO-5	appear for jobs with minimum eligibility as science graduate.
PO-6	appear for industrial jobs with minimum eligibility as graduate.
PSO. NO	Programme Specific Outcomes After completing B. Sc. ( Materials Science) Programme the students will be able to.....
PSO-1	understand the basics of Materials Science .
PSO-2	learn, design and perform experiments in the labs to demonstrate the concepts, principles and theories learned in the classrooms.
PSO-3	develop the ability to apply the knowledge acquired in the classroom and laboratories to specific problems in theoretical and experimental Materials Science.
PSO-4	identify their area of interest in academic, research and development.
PSO-5	perform job in various fields like science, engineering, education, banking, business and public service, etc. or be an entrepreneur with precision, analytical mind, innovative thinking, clarity of thought, expression, and systematic approach.

**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 Materials Science
2	Sem. III & IV	2025-26	2Year	88	5.0	UG Diploma in Materials Science

**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
<b>Total ( Major) (A)</b>		<b>42</b>	<b>86</b>	<b>65.15</b>	<b>55</b>	<b>126</b>	<b>71.59</b>	<b>54</b>	<b>126</b>	<b>71.59</b>
1	Minor & RM	12	24	18.18	13	28	15.91	13	28	15.91
<b>Total (Minor) (B)</b>		<b>12</b>	<b>24</b>	<b>18.18</b>	<b>12</b>	<b>28</b>	<b>15.91</b>	<b>13</b>	<b>28</b>	<b>15.91</b>
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
<b>Total (C)</b>		<b>11</b>	<b>22</b>	<b>16.67</b>	<b>11</b>	<b>22</b>	<b>12.50</b>	<b>11</b>	<b>22</b>	<b>12.50</b>
<b>Grand Total (A+B+C)</b>		<b>65</b>	<b>132</b>	<b>100</b>	<b>79</b>	<b>176</b>	<b>100</b>	<b>78</b>	<b>176</b>	<b>100</b>

### Duration:

- The program shall be a full-time program.
- The duration of program shall be two 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:
- (1<sup>st</sup> Year: Certificate, 2<sup>nd</sup> Year: Diploma)
- 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: 12<sup>th</sup> 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 As per the decision of the concern Board of Studies or Competent Authority):**
- 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).
- 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. I, II, and III.
- 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.



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**Faculty of Science and Technology**

**B. Sc. (Materials Science) Part-I**

<b>Semester I</b>				
<b>Sr. No.</b>	<b>Components</b>	<b>Course Code</b>	<b>Course</b>	<b>Credits</b>
1	Course-I	BMST 111	Properties of Materials	02
		BMST 112	Structure of Materials	02
		BMSP 113	Materials Science Practical -I	02
2	Course-II	-	DSC I, DSC II, DSP I	06
3	Course-III	-	DSC I, DSC II, DSP I	06
4	OE	BMSTOE1	Instrumentation Studies P-I	02
5	IKS	BMSTIKS 1	Introduction to Indian Knowledge System	02
<b>Total</b>				<b>22</b>
<b>Semester II</b>				
<b>Sr. No.</b>	<b>Components</b>	<b>Course Code</b>	<b>Course</b>	<b>Credits</b>
1	Course-I	BMST 121	Special Materials	02
		BMST 122	Thermal, Magnetic and Electrical Properties of Material	02
		BMSP 123	Materials Science Practical -II	02
2	Course-II	-	DSC III, DSC IV, DSP II	06
3	Course-III	-	DSC III, DSC IV, DSP II	06
4	OE	BMSTOE2	Instrumentation Studies P-II	02
5	VEC	BMSTVEC1	Democracy, Election and Indian Constitution	02
<b>Total</b>				<b>22</b>
<b>EXIT OPTION:</b> Award of UG Certificate in Major <b>with 44 credits</b> & an additional 4 credits core NSQF Course/Internship OR Continue with Major & Minor.				

**B. Sc. (Materials Science) Part-II**

<b>Semester III</b>				
<b>Sr. No.</b>	<b>Components</b>	<b>Course Code</b>	<b>Course</b>	<b>Credits</b>
1	Major	BMST 231	Methods of Testing of Materials	02
2	Major	BMST 232	Advanced Industrial Materials	02
3	Major Lab-III	BMSP 233	Materials Science Practical -III	02
4	Minor	-	DSC V, DSC VI, DSP III	06
5	OE	BMSTOE3	Instrumentation Studies P-III	02
6	VSC	BMSPVSC 1	Vocational Skill Course in Basic Electronics Circuits-I	02
7	SEC	BMSPSEC 1	Mechanical and Electrical Skills	02
8	AEC	BMSTAEC 1	English P-I	02
9	IKS	BMSTIKS 2	Indian Astronomy and Metallurgy IKS P-II	02
<b>Total</b>				<b>22</b>
<b>Semester IV</b>				
<b>Sr. No.</b>	<b>Components</b>	<b>Course Code</b>	<b>Course</b>	<b>Credits</b>
1	Major	BMST 241	Materials for Semiconductor Technology	02
2	Major	BMST 242	Applications in energy technology and Biomaterials	02
3	Major Lab IV	BMSP 243	Materials Science Practical -IV	02

4	Minor	-	DSC VII, DSC VIII, DSP IV	06
5	OE	BMSTOE 4	Instrumentation Studies P-IV	02
6	VSC	BMSPVSC 2	Materials Science in home appliances	02
7	SEC	BMSPSEC 2	Computational Skills in Materials Science	02
8	AEC	BMSTAEC 2	English P-II	02
9	VEC	BMSTVEC 2	Environmental Studies	02
			<b>Total</b>	<b>22</b>
<b>EXIT OPTION:</b> Award of UG Diploma in Major and Minor with <b>88 Credits</b> & an additional 4 credits core NSQF Course/ Internship OR Continue with Major & Minor				

Chairman  
BoS in Physics

Secretary  
Academic Council

Chairman  
Academic Council