



Karmaveer Bhaurao Patil University, Satara

Faculty of Science and Technology

B. Sc. (Seed Technology)

Programme and Credit Structure as per NEP 2020

{Ref. Government of Maharashtra letter no. ०००००.००००/०००.०.००/००००-००० ०० ००००००:
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The degree shall be titled as 'Bachelor of Science [Seed Technology] 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. (Seed Technology)

| PO. No. | Programme Outcomes After completing B. Sc. Programme the students will..... |
|---------|---|
| PO-1 | Graduate with proficiency in the subject. |
| PO-2 | Develop scientific attitude and become open minded, critical and curious so that they enter research field with a positive approach. |
| PO-3 | Develop skill in practical work, experiments and laboratory materials. |
| PO-4 | Become eligible to continue higher studies in their subject in India as well as abroad. |
| PO-5 | Become eligible to appear for the examinations for jobs in government organizations. |
| PO-6 | Become eligible to appear for jobs with minimum eligibility as science graduate. |
| PO-7 | Be able to establish their own entrepreneurial ventures. |
| PO-8 | Acquire increased ability of critical thinking, development of scientific attitude, handling of problems and generating solution, improve practical skills, enhance communication skill, social interaction, increase awareness in judicious use of plant resources by recognizing the ethical value system |
| PSO. NO | Programme Specific Outcomes After completing B. Sc. (Seed Technology) Programme the students will..... |
| PSO-1 | Recall the diversity, classification, evolution and developmental changes among the plants with reference to lower and higher plant groups and create a knowledge base in understanding the basis of Seed Science and Technology. |
| PSO-2 | Acquire and utilize the skills of post-harvest, flower design, fruit processing and dehydration techniques, organic farming and various plant processing technologies for developing the economy to the growing world. |
| PSO-3 | Know about the importance of seeds and its relevance in modern agriculture. |
| PSO-4 | Become competent seed technologist who can employ and implement their gained knowledge in basic and applied aspects that will profoundly influence the prevailing paradigm of agriculture, industry, healthcare and environment to provide sustainable development. |
| PSO-5 | Demonstrate knowledge and scientific understanding to identify research problems, design experiments, use appropriate methodologies, analyze and interpret data and provide solutions. Exhibit organizational skills and the ability to manage time and resources. |
| PSO-6 | Become competent enough for doing jobs in Govt. and private sectors of academia, research and industry along with graduate preparation for national as well as international competitive examinations, especially UGC-CSIR NET, UPSC Civil Services Examination, IFS, NSC, |

| | |
|--------|---|
| | FCI, FRI etc. |
| PSO-7 | Achieve lifelong learning by drawing attention to the vast world of knowledge of plants, their domestication and propagation |
| PSO-8 | Enhance their employability for jobs in different sectors. |
| PSO-9 | Attain the ability to exercise intelligence of scientific knowledge for investigation and innovation and nourishment of the world. |
| PSO-10 | Understanding of various analytical techniques of seed technology, use of plants as industrial raw material. |
| PSO-11 | Apply the fruitful knowledge of seed sciences and plant resources for the sustainable development, betterment of society and environment by recognizing the ethical values. |

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 Seed Technology |
| 2 | Sem. III & IV | 2025-26 | 2Year | 88 | 5.0 | UG Diploma in Seed Technology |
| 3 | Sem. V & VI | 2026-27 | 3Year | 132 | 5.5 | B. Sc. in Seed Technology (UG Three Year Degree) |
| 4 | Sem. VII & VIII | 2027-28 | 4Year | 176 | 6.0 | B. Sc. in Seed Technology [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.-I & III (Semester -III, IV V & Semester - VI).
- However under the National Education Policy the rules extended by KBP University, time to time regarding ATKKT 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
Faculty of Science and Technology

B. Sc. (Seed Technology) Part-I

| Semester I | | | | |
|-------------------|------------|-------------|---|-----------|
| Sr. No. | Components | Course Code | Course Title | Credits |
| 1 | Course-I | BSTT 111 | Seed Development and Morphology | 02 |
| | | BSTT 112 | Instrumentation and Techniques in Seed Technology | 02 |
| | | BSTP 113 | Lab-1 Practical based on Course-I & II | 02 |
| 2 | Course-II | ----- | DSC I, DSC II, DSP I | 06 |
| 3 | Course-III | ----- | DSC I, DSC II, DSP I | 06 |
| 4 | OE | BSTTOE1 | Business Management P-I | 02 |
| 5 | IKS | BSTTIKS 1 | Introduction to Indian Knowledge System | 02 |
| Total | | | | 22 |

| Semester II | | | | |
|--------------------|------------|-------------|--|-----------|
| Sr. No. | Components | Course Code | Course Title | Credits |
| 1 | Course-I | BSTT 221 | Fundamentals of Seed Technology | 02 |
| | | BSTT 222 | Vegetable Seed Production | 02 |
| | | BSTT 223 | Lab-1 Practical based on Course-I & II | 02 |
| 2 | Course-II | ----- | DSC III, DSC IV, DSP II | 06 |
| 3 | Course-III | ----- | DSC III, DSC IV, DSP II | 06 |
| 4 | OE | BSTTOE2 | Business Management P-II | 02 |
| 5 | VEC | BSTTVEC1 | 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. (Seed Technology) Part-II

| Semester III | | | | |
|---------------------|------------|-------------|---|-----------|
| Sr. No. | Components | Course Code | Course Title | Credits |
| 1 | Major | BSTT 231 | Hybrid Seed Production: Principles and Practice (P-V) | 02 |
| 2 | | BSTT 232 | Seed Pathology and Seed Entomology (P-VI) | 02 |
| 3 | Major Lab | BSTP 233 | Practical Based on Paper V and Paper VI | 02 |
| 4 | Minor | ----- | DSC V, DSC VI, DSP III | 06 |
| 5 | OE | BSTTOE3 | Business Management P-III | 02 |
| 6 | VSC | BSTPVSC 1 | Seed Bank | 02 |
| 7 | SEC | BSTPSEC 1 | Seed Processing Technology | 02 |
| 8 | AEC | BETAEC 1 | English P-I | 02 |
| 9 | IKS | BSTTIKS 2 | Indian Agriculture IKS P-II | 02 |
| Total | | | | 22 |

| Semester IV | | | | |
|--------------------|------------|-------------|--|---------|
| Sr. No. | Components | Course Code | Course Title | Credits |
| 1 | Major | BSTT 241 | Recent Trends in Seed Production (P-VII) | 02 |
| 2 | | BSTT 242 | Seed Biotechnology (P- VIII) | 02 |

| | | | | |
|--|--------------|-----------|---|-----------|
| 3 | Major Lab IV | BSTP 243 | Practical Based on Paper VII and Paper VIII | 02 |
| 4 | Minor | ----- | DSC VII, DSC VIII, DSP IV | 06 |
| 5 | OE | BSTTOE 4 | Business Management P-IV | 02 |
| 6 | VSC | BSTPVSC 2 | Seed Aesthetics | 02 |
| 7 | SEC | BSTPSEC 2 | Scientific writing | 02 |
| 8 | AEC | BETAEC 2 | English P-II | 02 |
| 9 | VEC | BSTTVEC 2 | Environmental Studies | 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. (Seed Technology) Part-III

| Semester V | | | | |
|--|-----------------------------------|--------------------|--|----------------|
| Sr. No. | Components | Course Code | Course Title | Credits |
| 1 | Major | BSTT 351 | Plant Breeding (P-IX) | 02 |
| 2 | Major | BSTT 352 | Seed Legislation and Certification (P-X) | 02 |
| 3 | Major | BSTT 353 | Seed Farm Management & Marketing (P-XI) | 02 |
| 4 | Electives (Any one out of two) | BSTT 354 | Recent Trends in Seed Technology-I (P-XIII1) | 02 |
| | | BSTT 354 | Recent Trends in Seed Technology -II(P-XIII2) | |
| 5 | Major Lab | BSTP 355 | Lab - V | 02 |
| 6 | Elective Lab | BSTP 356 | Lab - I | 02 |
| 7 | VSC | BSTPVSC 3 | Advanced Seed Processing & Packaging | 02 |
| 8 | AEC | BSTTAEC 3 | English P-III | 02 |
| 9 | OJT | BSTTOJT 1 | On Job Training in Seed Technology-I | 04 |
| 10 | CEP | BSTTCEP 1 | Community Engagement Programme in Seed Technology | 02 |
| Total | | | | 22 |
| Semester VI | | | | |
| Sr. | Components | Course Code | Course Title | Credits |
| 1 | Major | BSTT 361 | Seed Physiology (P-XIII) | 02 |
| 2 | Major | BSTT 362 | Recent Trends in Plant Breeding (P-XIV) | 02 |
| 3 | Major | BSTT 363 | Laboratory Techniques in Seed Technology (P-XV) | 02 |
| 4 | Electives (Any one out of two) | BSTT 364 | Economics of Seed Production & Marketing -I(P-XVIE1) | 02 |
| | | BSTT 364 | Economics of Seed Production & Marketing -II (P-XVIE2) | |
| 5 | Major Lab | BSTP 365 | Lab - VI | 02 |
| 6 | Elective Lab | BBP 366 | Lab - II | 02 |
| 7 | VSC | BSTPVSC 4 | Recent trends/ Advances in Seed Propagation | 02 |
| 8 | SEC | BSTPSEC 3 | AI in Seed Technology | 02 |
| 9 | FP | BSTTFP 1 | Field Project in Seed Technology | 02 |
| 10 | CC | BSTTCC 1 | Co-curricular Course in Seed Technology | 02 |
| 11 | AEC | BSTTAEC 4 | English P-IV | 02 |
| Total | | | | 22 |
| EXIT OPTION: Award of UG Degree in Major with 132 credits OR Continue with Major & Minor. | | | | |

B. Sc. (Botany) Part-IV Honors Degree

| Semester VII | | | |
|---------------------|-------------------|--------------------------|----------------|
| Sr. No. | Components | Course | Credits |
| 1 | Major | Seed Technology (P-XVII) | 04 |

| | | | |
|---|--------------|---|-----------|
| 2 | Major | Seed Technology (P-XVIII) | 04 |
| 3 | Major | Seed Technology (P-XIX) | 04 |
| 4 | Electives | Seed Technology (P-XXE1)/Seed Technology (P-XXE2) | 02 |
| 5 | Major Lab | Lab – VII | 02 |
| 6 | Elective Lab | Lab - III | 02 |
| 7 | Minor | Research Methodology | 04 |
| | | Total | 22 |

Semester VIII

| Sr. | Components | Course | Credits |
|-----|--------------|---|-----------|
| 1 | Major | Seed Technology (P-XXI) | 04 |
| 2 | Major | Seed Technology (P-XXII) | 04 |
| 3 | Major | Seed Technology (P-XXIII) | 04 |
| 4 | Electives | Seed Technology (P-XXIV1)/Seed Technology (P-XXIV2) | 02 |
| 5 | Major Lab | Lab – VIII | 02 |
| 6 | Elective Lab | Lab - IV | 02 |
| 7 | OJT | On Job Training in Seed Technology II | 04 |
| | | Total | 22 |

Award of Four year UG Honors Degree in Major and Minor with 176 credits.

B. Sc. (Seed Technology) Part-IV Honors with Research Degree

Semester VII

| Sr. No. | Components | Course | Credits |
|---------|------------|---|-----------|
| 1 | Major | Seed Technology (P-XVII) | 04 |
| 2 | Major | Seed Technology (P-XVIII) | 04 |
| 3 | Electives | Seed Technology (P-XIX1)/Seed Technology (P-XIX2) | 04 |
| 4 | Major Lab | Lab – VII | 02 |
| 5 | Minor | Research Methodology | 04 |
| 6 | RP | Research Project in Seed Technology I | 04 |
| | | Total | 22 |

Semester VIII

| Sr. | Components | Course | Credits |
|-----|------------|---|-----------|
| 1 | Major | Seed Technology (P-XX) | 04 |
| 2 | Major | Seed Technology (P-XXI) | 04 |
| 3 | Electives | Seed Technology (P-XXII1)/Seed Technology (P-XXII2) | 04 |
| 4 | Major Lab | Lab – VIII | 02 |
| 5 | RP | Research Project in Seed Technology II | 08 |
| | | Total | 22 |

Award of Four year UG Honors Degree in Major and Minor with 176 credits.

Chairman
BoS in Seed Technology

Secretary
Academic Council

Chairman
Academic Council