



SAVITRIBAI PHULE PUNE UNIVERSITY
DEPARTMENT OF EDUCATION & EXTENSION

B.Sc. B.Ed. (Integrated)

(Year I) (Semester I)

Pattern 2019

(1.21)

| Sr. No | Name of the Subject | Course Code | Name of the Paper | Credit | Marks | | Total |
|--------|---------------------|-------------|--|--------|----------|----------|-------|
| | | | | | Internal | External | |
| 1 | Physics I | BSC 111 | Mechanics & Properties of Matter | 02 | 25 | 25 | 50 |
| | Physics II | BSC112 | Physics Principles and Applications | 02 | 25 | 25 | 50 |
| | Physics III | BSC 113 | Physics Practical | 02 | 15 | 35 | 50 |
| 2 | Chemistry I | BSC 121 | Physical Chemistry | 02 | 25 | 25 | 50 |
| | Chemistry II | BSC122 | Organic Chemistry | 02 | 25 | 25 | 50 |
| | Chemistry III | BSC 123 | Chemistry Practical | 02 | 15 | 35 | 50 |
| 3 | Mathematics I | BSC 131 | Algebra | 02 | 25 | 25 | 50 |
| | Mathematics II | BSC 132 | Calculus I | 02 | 25 | 25 | 50 |
| | Mathematics III | BSC 133 | Mathematics Practical | 02 | 15 | 35 | 50 |
| 4 | Statistics I | BSC 141 | Descriptive Statistics I | 02 | 25 | 25 | 50 |
| | Statistics II | BSC 142 | Discrete Probability & Probability Distributions I | 02 | 25 | 25 | 50 |
| | Statistics III | BSC 143 | Statistics Practical | 02 | 15 | 35 | 50 |
| 5 | Botany I | BSC 151 | Plant Life & Utilization I | 02 | 25 | 25 | 50 |
| | Botany II | BSC 152 | Plant Morphology and Anatomy | 02 | 25 | 25 | 50 |
| | Botany III | BSC 153 | Botany Practical | 02 | 15 | 35 | 50 |
| 6 | Zoology I | BSC161 | Animal Diversity I | 02 | 25 | 25 | 50 |
| | Zoology II | BSC 162 | Animal Ecology | 02 | 25 | 25 | 50 |

| | Zoology III | BSC 163 | Zoology Practical | 02 | 15 | 35 | 50 |
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| Sr. No | Name of the Subject | Course Code | Name of the Paper | Credit | Marks | | Total |
| | | | | | Internal | External | |
| 7 | Geography I | BSC 171 | Introduction to Physical Geography I (Geomorphology) | 02 | 25 | 25 | 50 |
| | Geography II | BSC 172 | Introduction to Physical Geography II (Geography of Atmosphere & Hydrosphere) | 02 | 25 | 25 | 50 |
| | Geography III | BSC 173 | Geography Practical | 02 | 15 | 35 | 50 |
| 8 | English | BED 101 | English I | 02 | 25 | 25 | 50 |
| 9 | Understanding of Education and its Perspectives | BED 111 | Understanding of Education & its Perspectives | 01 | 13 | 12 | 25 |
| 10 | Indian Constitution & Human Rights | BED 141 | Indian Constitution & Human Rights | 01 | 13 | 12 | 25 |



SAVITRIBAI PHULE PUNE UNIVERSITY
DEPARTMENT OF EDUCATION & EXTENSION

B.Sc. B.Ed. (Integrated)
(Year I) (Semester II)
Pattern 2019

| Sr. No | Name of the Subject | Course Code | Name of the Paper | Credit | Marks | | Total |
|--------|---------------------|-------------|---|--------|----------|----------|-------|
| | | | | | Internal | External | |
| 1 | Physics IV | BSC 211 | Heat and Thermodynamics | 02 | 25 | 25 | 50 |
| | Physics V | BSC212 | Electricity and Magnetism | 02 | 25 | 25 | 50 |
| | Physics VI | BSC 213 | Physics Practical | 02 | 15 | 35 | 50 |
| 2 | Chemistry IV | BSC 221 | Inorganic Chemistry | 02 | 25 | 25 | 50 |
| | Chemistry V | BSC222 | Analytical Chemistry | 02 | 25 | 25 | 50 |
| | Chemistry VI | BSC 223 | Chemistry Practical | 02 | 15 | 35 | 50 |
| 3 | Mathematics IV | BSC 231 | Analytical Geometry | 02 | 25 | 25 | 50 |
| | Mathematics V | BSC232 | Calculus - II | 02 | 25 | 25 | 50 |
| | Mathematics VI | BSC 233 | Mathematics Practical | 02 | 15 | 35 | 50 |
| 4 | Statistics IV | BSC241 | Descriptive Statistics II | 02 | 25 | 25 | 50 |
| | Statistics V | BSC 242 | Discrete Probability & Probability Distributions II | 02 | 25 | 25 | 50 |
| | Statistics VI | BSC 243 | Statistics Practical | 02 | 15 | 35 | 50 |
| 5 | Botany IV | BSC251 | Plant Life & Utilization II | 02 | 25 | 25 | 50 |
| | Botany V | BSC 252 | Principles of Plant Science | 02 | 25 | 25 | 50 |
| | Botany VI | BSC 253 | Botany Practical | 02 | 15 | 35 | 50 |

| 6 | Zoology IV | BSC261 | Animal Diversity II | 02 | 25 | 25 | 50 |
|--------|----------------------|----------------------|-------------------------------------|--------|----------|----------|-------|
| | Zoology V | BSC 262 | Cell Biology | 02 | 25 | 25 | 50 |
| | Zoology VI | BSC 263 | Zoology Practical | 02 | 15 | 35 | 50 |
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| Sr. No | Name of the Subject | Course Code | Name of the Paper | Credit | Marks | | Total |
| | | | | | Internal | External | |
| 7 | Geography IV | BSC 271 | Introduction Human Geography | 02 | 25 | 25 | 50 |
| | Geography V | BSC 272 | Population and Settlement Geography | 02 | 25 | 25 | 50 |
| | Geography VI | BSC 273 | Geography Practical | 02 | 15 | 35 | 50 |
| 8 | (Any One) BED 201 | (Any One) Marathi | (Any One) Marathi I | 02 | 25 | 25 | 50 |
| | BED 202 | German | German I | 02 | 25 | 25 | 50 |
| 9 | BED 241 | ICT | ICT for Teaching & Learning I | 01 | 13 | 12 | 25 |
| 10 | BED 242 | Yoga | Yoga I | 01 | 13 | 12 | 25 |



SAVITRIBAI PHULE PUNE UNIVERSITY
DEPARTMENT OF EDUCATION & EXTENSION

B.Sc. B.Ed. (Integrated)
(Year II) (Semester III)
Pattern 2019

| Sr. No | Name of the Subject | Course Code | Name of the Paper | Credit | Marks | | Total | Teaching Hours |
|--------|---------------------|-------------|---|--------|----------|----------|-------|----------------|
| | | | | | Internal | External | | |
| 1 | Physics VII | BSC 311 | Mathematical Methods in Physics-I | 02 | 25 | 25 | 50 | 32 |
| | Physics VIII | BSC312 | Electronics-I | 02 | 25 | 25 | 50 | 32 |
| | Physics IX | BSC 313 | Physics Practical | 02 | 15 | 35 | 50 | 32 |
| 2 | Chemistry VII | BSC 321 | Physical & Analytical Chemistry-I | 02 | 25 | 25 | 50 | 32 |
| | Chemistry VIII | BSC322 | Inorganic & Organic Chemistry -I | 02 | 25 | 25 | 50 | 32 |
| | Chemistry IX | BSC 323 | Chemistry Practical | 02 | 15 | 35 | 50 | 32 |
| 3 | Mathematics VII | BSC 331 | Calculus of Several variables | 02 | 25 | 25 | 50 | 32 |
| | Mathematics VIII | BSC332 | Any one A) Numerical Methods and Its Applications B) Graph Theory | 02 | 25 | 25 | 50 | 32 |
| | Mathematics IX | BSC 333 | Mathematics Practical | 02 | 15 | 35 | 50 | 32 |
| | Botany VII | BSC351 | Taxonomy of Angiosperms & Plant Ecology | 02 | 25 | 25 | 50 | 32 |
| | Botany VIII | BSC 352 | Plant Physiology | 02 | 25 | 25 | 50 | 32 |

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| 4 | | | | | | | | |
| | Botany IX | BSC 353 | Botany Practical | 02 | 15 | 35 | 50 | 32 |
| 5 | Zoology VII | BSC361 | Animal Diversity III | 02 | 25 | 25 | 50 | 32 |
| | Zoology VIII | BSC 362 | Applied Zoology-I | 02 | 25 | 25 | 50 | 32 |
| | Zoology IX | BSC 363 | Zoology Practical | 02 | 15 | 35 | 50 | 32 |
| 6 | (Any One) Marathi | (Any One) | (Any One) Marathi II | 02 | 25 | 25 | 50 | |
| | German | BED 301 BED 302 | German II | 02 | 25 | 25 | 50 | |
| 7 | ICT | BED 341 | ICT for Teaching & Learning II | 01 | 13 | 12 | 25 | |
| 8 | TC I | BED 331 | Teaching Competency I | 01 | 13 | 12 | 25 | |



SAVITRIBAI PHULE PUNE UNIVERSITY
DEPARTMENT OF EDUCATION & EXTENSION

B.Sc. B.Ed. (Integrated)
(Year II) (Semester IV)
Pattern -2019

| Sr. No | Name of the Subject | Course Code | Name of the Paper | Credit | Marks | | Total | Teaching Hours |
|--------|---------------------|-------------|---|--------|----------|----------|-------|----------------|
| | | | | | Internal | External | | |
| 1 | Physics X | BSC 411 | Oscillations, Waves & Sound | 02 | 25 | 25 | 50 | 32 |
| | Physics XI | BSC412 | Optics | 02 | 25 | 25 | 50 | 32 |
| | Physics XII | BSC 413 | Physics Practical | 02 | 15 | 35 | 50 | 32 |
| 2 | Chemistry X | BSC 421 | Physical & Analytical Chemistry-II | 02 | 25 | 25 | 50 | 32 |
| | Chemistry XI | BSC422 | Inorganic & Organic Chemistry-II | 02 | 25 | 25 | 50 | 32 |
| | Chemistry XII | BSC 423 | Chemistry Practical | 02 | 15 | 35 | 50 | 32 |
| 3 | Mathematics X | BSC 431 | Linear Algebra | 02 | 25 | 25 | 50 | 32 |
| | Mathematics XI | BSC432 | Any one A) Vector Calculus B) Dynamical Systems | 02 | 25 | 25 | 50 | 32 |
| | Mathematics XII | BSC 433 | Mathematics Practical | 02 | 15 | 35 | 50 | 32 |
| | Botany X | BSC451 | Plant Anatomy & Embryology | 02 | 25 | 25 | 50 | 32 |

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|----|--------------------------|---------|--------------------------|----|----|----|----|----|
| 4 | Botany XI | BSC 452 | Plant Biotechnology | 02 | 25 | 25 | 50 | 32 |
| | Botany XII | BSC 453 | Botany Practical | 02 | 15 | 35 | 50 | 32 |
| 5 | Zoology X | BSC461 | Animal Diversity IV | 02 | 25 | 25 | 50 | 32 |
| | Zoology XI | BSC 462 | Applied Zoology-II | 02 | 25 | 25 | 50 | 32 |
| | Zoology XII | BSC 463 | Zoology Practical | 02 | 15 | 35 | 50 | 32 |
| 6 | English | BED 401 | English II | 02 | 25 | 25 | 50 | 32 |
| 7 | Childhood and Growing up | BED 411 | Childhood and Growing up | 02 | 25 | 25 | 50 | 32 |
| 8 | General pedagogy | BED 421 | General Pedagogy | 02 | 25 | 25 | 50 | 32 |
| 9 | TC II | BED 431 | Teaching Competency II | 01 | 13 | 12 | 25 | 16 |
| 10 | Yoga | BED 442 | Yoga II | 01 | 13 | 12 | 25 | 16 |



SAVITRIBAI PHULE PUNE UNIVERSITY
DEPARTMENT OF EDUCATION & EXTENSION
B.Sc. B.Ed. (Integrated)
(Year III) (Semester V)
Pattern-2019

| Sr. No | Name of the Subject | Course Code | Name of the Paper | Credit | Marks | | Total |
|--------|---------------------|---|---|--------|----------|----------|-------|
| | | | | | Internal | External | |
| 1 | Physics IX | BSC 511 | Mathematical Methods in Physics II | 02 | 25 | 25 | 50 |
| 2 | Physics X | BSC 512 | Electrodynamics | 02 | 25 | 25 | 50 |
| 3 | Physics XI | (Any One) BSC513(A) BSC 513(B) BSC 513(C) BSC513(D) BSC 513(E) BSC 513(F) | (Any One) Astronomy and Astrophysics I Elements of Material Science Biophysics Renewable Energy Sources I Applied Optics C# Programming | 02 | 25 | 25 | 50 |
| 4 | Physics XII | BSC 514 A BSC 514 B BSC 514 C BSC 514 D | (Select any One) Python Programming Energy Studies Introduction to Arduino Sensors and Transducer | 02 | 25 | 25 | 50 |
| 5 | Chemistry IX | BSC 521 | Physical Chemistry I | 02 | 25 | 25 | 50 |
| 6 | Chemistry X | BSC 522 | Inorganic Chemistry I | 02 | 25 | 25 | 50 |
| 7 | Chemistry XI | BSC 523 | Organic Chemistry I | 02 | 25 | 25 | 50 |
| 9 | Chemistry XII | BSC 524 (A) BSC 524 (B) | Introduction of Medicinal Chemistry Polymer Chemistry | 02 | 25 | 25 | 50 |
| 10 | Mathematics IX | BSC 531 | Metric Spaces | 02 | 25 | 25 | 50 |

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| 11 | Mathematics X | BSC 532 | Real Analysis I | 02 | 25 | 25 | 50 |
| 12 | Mathematics XI | BSC 533(A) BSC 533(B) BSC 533(C) | Operational Research Differential Geometry C- Programming | 02 | 25 | 25 | 50 |
| 13 | Mathematics XII | BSC 534 | Programming in Python - I | 02 | 25 | 25 | 50 |
| 14 | Botany IX | BSC 551 | Algae & Fungi | 02 | 25 | 25 | 50 |
| 15 | Botany X | BSC 552 | Archegoniate | 02 | 25 | 25 | 50 |
| 16 | Botany XI | BSC 553 | Spermatophyta & Paleobotany | 02 | 25 | 25 | 50 |
| 17 | Botany XII | BSC 554 | Medicinal Botany | 02 | 25 | 25 | 50 |
| 18 | Zoology IX | BSC 561 | Paste Management | 02 | 25 | 25 | 50 |
| 19 | Zoology X | BSC 562 | Histology | 02 | 25 | 25 | 50 |
| 20 | Zoology XI | BSC 563 | Biological Chemistry | 02 | 25 | 25 | 50 |
| 21 | Zoology XII | BSC 564 | Aquarium Management | 02 | 25 | 25 | 50 |
| 22 | Environment Education | BED 501 | Environment Education | 02 | 25 | 25 | 50 |
| 23 | Assessment & Evaluation in Education | BED 511 | Assessment & Evaluation in Education | 02 | 25 | 25 | 50 |
| 24 | Psychology of Learner & Learning Theories I | BED 512 | Psychology of Learner & Learning Theories I | 02 | 25 | 25 | 50 |
| 25 | TC III | BED 531 | Teaching Competency III | 04 | 25 | 75 | 100 |
| 26 | Understanding Self | BED 532 | Understanding self | 01 | 13 | 12 | 25 |
| 27 | ICT | BED 541 | ICT (Web Technology) | 01 | 13 | 12 | 25 |



SAVITRIBAI PHULE PUNE UNIVERSITY
DEPARTMENT OF EDUCATION & EXTENSION
B.Sc. B.Ed. (Integrated)
(Year III) (Semester VI)
Pattern-2019

| Sr. No | Name of the Subject | Course Code | Name of the Paper | Credit | Marks | | Total |
|--------|---------------------|-------------|---|--------|----------|----------|-------|
| | | | | | Internal | External | |
| 1 | Physics XIII | BSC 611 | Classical Mechanics | 02 | 25 | 25 | 50 |
| 2 | Physics XIV | BSC 612 | Atomic and Molecular Physics | 02 | 25 | 25 | 50 |
| 3 | Physics XV | BSC 613 | Computational Physics | 02 | 25 | 25 | 50 |
| 4 | Physics XVI | BSC 614 A | (Select Any One) Physics Workshop Skill | 02 | 25 | 25 | 50 |
| | | BSC 614 B | Biomedical Instrumentation | 02 | 25 | 25 | 50 |
| | | BSC 614 C | Non-destructive Testing Techniques | 02 | 25 | 25 | 50 |
| | | BSC 614 D | Electro Acoustics and Entertainment Electronics | 02 | 25 | 25 | 50 |
| 5 | Physics XVII | BSC 615 | Physics Laboratory 6 A | 02 | 15 | 35 | 50 |
| 6 | Physics XVIII | BSC 616 | Physics Laboratory 6 B | 02 | 15 | 35 | 50 |
| 7 | Physics XIX | BSC 617 | Project I | 02 | 15 | 35 | 50 |
| 8 | Chemistry XIII | BSC 621 | Analytical Chemistry | 02 | 25 | 25 | 50 |
| 9 | Chemistry XIV | BSC 622 | Industrial Chemistry I | 02 | 25 | 25 | 50 |
| 10 | Chemistry XV | BSC 623 | Chemistry of Bio | 02 | 25 | 25 | 50 |

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| 11 | Chemistry XVI | | molecules (Any One) | | | | |
| | | BSC 624 (A) | Environmental and Green Chemistry | 02 | 25 | 25 | 50 |
| | | BSC 624 (B) | Chemo Informatics | 02 | 25 | 25 | 50 |
| 12 | Chemistry VII | BSC 625 | Physical Chemistry Practical I | 02 | 15 | 35 | 50 |
| 13 | Chemistry XVIII | BSC 626 | Inorganic Chemistry Practical I | 02 | 15 | 35 | 50 |
| 14 | Chemistry XIX | BSC 627 | Organic Chemistry Practical I | 02 | 15 | 35 | 50 |
| 15 | Mathematics XIII | BSC 631 | Group Theory | 02 | 25 | 25 | 50 |
| 16 | Mathematics XIV | BSC 632 | Ordinary Differential Equations | 02 | 25 | 25 | 50 |
| 17 | Mathematics XV | BSC 633 (A) | (Select Any One) Machine Learning I | 02 | 25 | 25 | 50 |
| | | BSC 633(B) | Number Theory | 02 | 25 | 25 | 50 |
| | | BSC 633(C) | Laplace Transform and Fourier Series | 02 | 25 | 25 | 50 |
| 18 | Mathematics XVI | BSC 634 | LaTeX for Scientific Writing | 02 | 25 | 25 | 50 |
| 19 | Mathematics XVII | BSC 635 | Practical Course Lab I (Metric Space and Real Analysis I) | 02 | 15 | 35 | 50 |
| 20 | Mathematics XVIII | BSC 636 | Practical Course Lab II (On Group Theory and Ordinary Differential Equations) | 02 | 15 | 35 | 50 |
| 21 | Mathematics XIX | BSC 637 | Practical Course Lab III (On Operations Research and Number Theory) | 02 | 15 | 35 | 50 |
| 22 | Botany XIII | BSC 651 | Plant Ecology | 02 | 25 | 25 | 50 |
| 23 | Botany XIV | BSC 652 | Cell & Molecular Biology | 02 | 25 | 25 | 50 |
| 24 | Botany XV | BSC 653 | Genetics | 02 | 25 | 25 | 50 |
| 25 | Botany XVI | BSC 654 | Plant Diversity & Human Health | 02 | 25 | 25 | 50 |
| 26 | Botany XVII | BSC 655 | Botany Practical I | 02 | 15 | 35 | 50 |
| 27 | Botany XVIII | BSC 656 | Botany Practical II | 02 | 15 | 35 | 50 |
| 28 | Botany XIX | BSC 657 | Botany Practical III | 02 | 15 | 35 | 50 |

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| 29 | Zoology XIII | BSC 661 | Genetics | 02 | 25 | 25 | 50 |
| 30 | Zoology XIV | BSC 662 | Developmental Biology | 02 | 25 | 25 | 50 |
| 31 | Zoology XV | BSC 663 | Parasitology | 02 | 25 | 25 | 50 |
| 32 | Zoology XVI | BSC 664 | Poultry Management | 02 | 25 | 25 | 50 |
| 33 | Zoology XVII | BSC 665 | Zoology Practical I | 02 | 15 | 35 | 50 |
| 34 | Zoology XVIII | BSC 666 | Zoology Practical II | 02 | 15 | 35 | 50 |
| 35 | Zoology XIX | BSC 667 | Zoology Practical III | 02 | 15 | 35 | 50 |
| 36 | Creative and Critical Thinking | BED 601 | Creative and Critical Thinking | 02 | 25 | 25 | 50 |
| 37 | Teaching Competency IV | BED 631 | Teaching Competency IV | 04 | 25 | 75 | 100 |
| 38 | Basic Research | BED611 | Basic Research | 02 | 25 | 25 | 50 |
| 39 | Psychology of Learner & Learning Theories II | BED 612 | Psychology of Learner & Learning Theories II | 02 | 25 | 25 | 50 |
| 40 | Pedagogy of Physical Sciences | BED 621 | Pedagogy of Physical Sciences | 04 | 50 | 50 | 100 |
| 41 | Pedagogy of Chemical Sciences | BED622 | Pedagogy of Chemical Sciences | 04 | 50 | 50 | 100 |
| 42 | Pedagogy of Mathematics | BED 623 | Pedagogy of Mathematical Sciences | 04 | 50 | 50 | 100 |
| 43 | Pedagogy of Biological Sciences | BED 624 | Pedagogy of Biological Sciences | 04 | 50 | 50 | 100 |
| 44 | E-Learning & Educational Development | BED641 | E-Learning & Educational Development | 01 | 13 | 12 | 25 |



SAVITRIBAI PHULE PUNE UNIVERSITY
DEPARTMENT OF EDUCATION & EXTENSION
B.Sc. B.Ed. (Integrated)
(Year IV) (Semester VII)
Pattern 2019

| Sr. No | Name of the Subject | Course Code | Name of the Paper | Credit | Marks | | Total |
|--------|---------------------|--------------------------|---|--------|----------|----------|-------|
| | | | | | Internal | External | |
| 1 | Physics XX | BSC 711 | Solid State Physics | 02 | 25 | 25 | 50 |
| 2 | Physics XXI | BSC 712 | Quantum Mechanics | 02 | 25 | 25 | 50 |
| 3 | Physics XXII | (Any One) BSC713 (A) | (Any One) Medical Electronics | 02 | 25 | 25 | 50 |
| | | BSC713 (B) | Physics of Nanomaterial | 02 | 25 | 25 | 50 |
| | | BSC713 (C) | Microcontrollers | 02 | 25 | 25 | 50 |
| | | BSC 713 (D) | LASER's | 02 | 25 | 25 | 50 |
| | | BSC 713 (E) | Astronomy & Astrophysics II | 02 | 25 | 25 | 50 |
| | | BSC 713 (F) | Renewable Energy Sources II | 02 | 25 | 25 | 50 |
| 4 | Physics XXIII | BSC 714(A) | (Select any one) Scientific Data Analysis using Python | 02 | 25 | 25 | 50 |
| | | BSC 714 (B) | Solar PV System: Installation, Preparing & Maintenance | 02 | 25 | 25 | 50 |
| | | BSC 714 (C) | Applications of Internet of things (IOT) | 02 | 25 | 25 | 50 |
| | | BSC 714 (D) | Calibration Techniques | 02 | 25 | 25 | 50 |

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|----|-----------------------------|----------------------------|---|----|-----|-----|-----|
| 5 | Chemistry XX | BSC 721 | Physical Chemistry II | 02 | 25 | 25 | 50 |
| 6 | Chemistry XXI | BSC 722 | Inorganic Chemistry II | 02 | 25 | 25 | 50 |
| 7 | Chemistry XXII | BSC 723 | Organic Chemistry II | 02 | 25 | 25 | 50 |
| 8 | Chemistry XXIII | BSC 724 (A) BSC 724 (B) | Chemistry of soil & Agrochemicals Introduction of Forensic Chemistry | 02 | 25 | 25 | 50 |
| 9 | Mathematics XX | BSC 731 | Complex Analysis | 02 | 25 | 25 | 50 |
| 10 | Mathematics XXI | BSC 732 | Real Analysis II | 02 | 25 | 25 | 50 |
| 11 | Mathematics XXII | BSC 733(A) | Optimization Techniques | 02 | 25 | 25 | 50 |
| | | BSC 733(B) | Calculus of Variation and Classical Mechanics | 02 | 25 | 25 | 50 |
| | | BSC 733(C) | Financial Mathematics | 02 | 25 | 25 | 50 |
| 12 | Mathematics XXIII | BSC 734 | Programming in Python - II | 02 | 25 | 25 | 50 |
| 13 | Botany XX | BSC 751 | Plant Physiology | 02 | 25 | 25 | 50 |
| 14 | Botany XXI | BSC 752 | Biochemistry | 02 | 25 | 25 | 50 |
| 15 | Botany XXII | BSC 753 | Plant Pathology | 02 | 25 | 25 | 50 |
| 16 | Botany XXIII | BSC 754 | Nursery & Gardening Management | 02 | 25 | 25 | 50 |
| 17 | Zoology XX | BSC 761 | Medical & Forensic Zoology | 02 | 25 | 25 | 50 |
| 18 | Zoology XXI | BSC 762 | Animal Physiology | 02 | 25 | 25 | 50 |
| 19 | Zoology XXII | BSC 763 | Molecular Biology | 02 | 25 | 25 | 50 |
| 20 | Zoology XXIII | BSC 764 | Environmental Impact Assessment | 02 | 25 | 25 | 50 |
| 21 | Inclusive Education | BED 701 | Inclusive Education | 02 | 25 | 25 | 50 |
| 22 | Theatre & Arts in Education | BED 741 | Theatre & Arts in Education | 02 | 25 | 25 | 50 |
| 23 | Teaching Competency V | BED 731 | Teaching Competency V | 08 | 100 | 100 | 200 |



SAVITRIBAI PHULE PUNE UNIVERSITY
DEPARTMENT OF EDUCATION & EXTENSION

B.Sc. B.Ed. (Integrated)

(Year IV) (Semester VIII)

Pattern 2019

| Sr. No | Name of the Subject | Course Code | Name of the Paper | Credit | Marks | | Total |
|--------|---------------------|----------------------------|--|--------|----------|----------|-------|
| | | | | | Internal | External | |
| 1 | Physics XXIV | BSC 811 | Thermodynamics and Statistical Physics | 02 | 25 | 25 | 50 |
| 2 | Physics XXV | BSC 812 | Nuclear Physics | 02 | 25 | 25 | 50 |
| 3 | Physics XXVI | BSC 813 (A) BSC 813 (B) | Electronics II Advances Electronics | 02 | 25 | 25 | 50 |
| 4 | Physics XXVII | BSC814(A) | (Any One) Microcontrollers | 02 | 25 | 25 | 50 |
| | | BSC 814(B) | Instrumentation for Agriculture | 02 | 25 | 25 | 50 |
| | | BSC 814 (C) | Radiation Physics | 02 | 25 | 25 | 50 |
| | | BSC 814 (D) | Photography | 02 | 25 | 25 | 50 |
| 5 | Physics XXVIII | BSC 815 | Physics Laboratory 8 A | 04 | 20 | 80 | 100 |
| 6 | Physics XXIX | BSC 816 | Physics Laboratory 8 B | 04 | 20 | 80 | 100 |
| 7 | Physics XXX | BSC 817 | Project II | 04 | 20 | 80 | 100 |
| 8 | Chemistry XXIV | BSC 821 | Physical Chemistry III | 02 | 25 | 25 | 50 |
| 9 | Chemistry XXV | BSC 822 | Inorganic Chemistry III | 02 | 25 | 25 | 50 |
| 10 | Chemistry XXVI | BSC 823 | Organic Chemistry III | 02 | 25 | 25 | 50 |
| 11 | Chemistry XXVII | (Any One) | (Any One) | | | | |

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|----|--------------------|--|---|----------------|----------------|----------------|----------------|
| | | BSC 824 (A) | Analytical Chemistry II | 02 | 25 | 25 | 50 |
| | | BSC 824 (B) | Chemistry of cosmetics and perfumes | 02 | 25 | 25 | 50 |
| 12 | Chemistry XXVIII | BSC 825 | Physical Chemistry Practical II | 02 | 15 | 35 | 50 |
| 13 | Chemistry XXIX | BSC 826 | Inorganic Chemistry Practical II | 02 | 15 | 35 | 50 |
| 14 | Chemistry XXX | BSC 827 | Organic Chemistry Practical II | 02 | 15 | 35 | 50 |
| 15 | Mathematics XXIV | BSC 831 | Ring Theory | 02 | 25 | 25 | 50 |
| 16 | Mathematics XXV | BSC 832 | Partial Differential Equations | 02 | 25 | 25 | 50 |
| 17 | Mathematics XXVI | (Any One) BSC 833 (A) BSC 833(B) BSC 833(C) | Machine Learning - II Computational Geometry Lebesgue Integration | 02 02 02 | 25 25 25 | 25 25 25 | 50 50 50 |
| 18 | Mathematics XXVII | BSC 834 | Mathematics into LaTeX | 02 | 25 | 25 | 50 |
| 19 | Mathematics XXVIII | BSC 835 | Practical Course Lab I (On Complex Analysis and Real Analysis II) | 02 | 15 | 35 | 50 |
| 20 | Mathematics XXIX | BSC 836 | Practical Course Lab II (On Ring Theory and Partial Differential Equations) | 02 | 15 | 35 | 50 |
| 21 | Mathematics XXX | BSC 837 | Practical Course Lab III | 02 | 15 | 35 | 50 |
| 22 | Botany XXIV | BSC 851 | Evolution & Population Genetics | 02 | 25 | 25 | 50 |
| 23 | Botany XXV | BSC 852 | Advanced Plant Biotechnology | 02 | 25 | 25 | 50 |
| 24 | Botany XXVI | BSC 853 | Plant Breeding & Seed Technology | 02 | 25 | 25 | 50 |
| 25 | Botany XXVII | BSC 854 | Bio fertilizers | 02 | 25 | 25 | 50 |
| 26 | Botany XXVIII | BSC 855 | Botany Practical IV | 02 | 15 | 35 | 50 |
| 27 | Botany XXIX | BSC 856 | Botany Practical V | 02 | 15 | 35 | 50 |
| 28 | Botany XXX | BSC 857 | Botany Practical VI | 02 | 15 | 35 | 50 |

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|----|---|---------|---|----|----|----|-----|
| 29 | Zoology XXIV | BSC 861 | Entomology | 02 | 25 | 25 | 50 |
| 30 | Zoology XXV | BSC 862 | Techniques in Biology | 02 | 25 | 25 | 50 |
| 31 | Zoology XXVI | BSC 863 | Evolutionary Biology | 02 | 25 | 25 | 50 |
| 32 | Zoology XXVII | BSC 864 | Zoology Project | 02 | 15 | 35 | 50 |
| 33 | Zoology XXVIII | BSC 865 | Zoology Practical IV | 02 | 15 | 35 | 50 |
| 34 | Zoology XXIX | BSC 866 | Zoology Practical V | 02 | 15 | 35 | 50 |
| 35 | Zoology XXX | BSC 867 | Zoology Practical VI | 02 | 15 | 35 | 50 |
| 36 | Guidance & Counselling | BED 801 | Guidance & Counselling | 02 | 25 | 25 | 50 |
| 37 | Secondary Education | BED 811 | Secondary Education | 02 | 25 | 25 | 50 |
| 38 | Curriculum Development | BED 812 | Curriculum Development | 02 | 25 | 25 | 50 |
| 39 | Quality & Management of Secondary Education | BED 813 | Quality & Management of Secondary Education | 02 | 25 | 25 | 50 |
| 40 | Language & Communication | BED841 | Language & Communication | 02 | 25 | 25 | 50 |
| 41 | Entrepreneurship | BED 842 | Entrepreneurship | 02 | 25 | 25 | 50 |
| 42 | Open course | BED843 | Open course | 04 | 50 | 50 | 100 |