Estd. 1962
"A++" Accredited by NAAC (2021)
With CGPA 3.52

SHIVAJI UNIVERSITY, KOLHAPUR - 416004, MAHARASHTRA
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शिवाजी विद्यापीठ, कोल्हापूर -४१६००४,महाराष्ट्र
दूरध्वनी-ईपीएबीएक्स -२६०९०००, अभ्याससमंडळे विभाग दुरध्वनी ०२३१—२६०९०९४
०२३१—२६०९४८७

SU/BOS/Science/350 **Date: 24/06/2024**

To,

The Principal,
All Concerned Affiliated Colleges/Institutions
Shivaji University, Kolhapur

Subject: Regarding Minor Change syllabi of B.Sc. Part-I (Sem.I & II) as per NEP-2020 (2.0) degree programme under the Faculty of Science and Technology.

Ref: SU/BOS/Science/876/ Date: 26/12/2023 Letter.

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the Minor Change syllabi, nature of question paper of B.Sc. Part-I (Sem.I & II) as per NEP-2020 (2.0) degree programme under the Faculty of Science and Technology.

B.Sc.Part-I (Sem. I & II) as per NEP-2020 (2.0)			
1.	Botany	9.	Geology
2.	Physics	10.	Zoology
3.	Statistics	11.	Chemistry
4.	Astrophysics	12.	Geography
5.	Mathematics	13.	Electronics
6.	Microbiology	14.	Drug Chemistry
7.	Plant Protection	15.	Industrial Microbiology
8.	Astrophysics and Space Science	16.	Sugar Technology (Entire)

This syllabus, nature of question and equivalence shall be implemented from the academic year 2024-2025 onwards. A soft copy containing the syllabus is attached herewith and it is also available on university website www.unishivaji.ac.in NEP-2020@suk(Online Syllabus)

The question papers on the pre-revised syllabi of above-mentioned course will be set for the examinations to be held in October /November 2024 & March/April 2025. These chances are available for repeater students, if any.

You are, therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Dy Registrar
Dr. S. M. Kubal

Copy to:

1	The Dean, Faculty of Science & Technology	4	B.Sc. Exam/ Appointment Section
2	Director, Board of Examinations and Evaluation	5	Computer Centre/ Eligibility Section
3	The Chairman, Respective Board of Studies	6	Affiliation Section (U.G.) (P.G.)

SHIVAJI UNIVERSITY, KOLHAPUR.

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Revised Syllabus For

B. Sc. I Botany (DSC)

(Faculty of Science & Technology)

Paper –I, II - (Semester- I)

and

Paper -III, IV - (Semester-II)

NEP-2020 (2.0) Syllabus to be implemented from

June, 2024 onwards.

SHIVAJIUNIVERSITY,KOLHAPUR

NEP-2020 (2.0): Credit Framework for UG(B. Sc.) Programme under Faculty of Science and Technology

SEM (Level)	COURSES			OE	VSC/SEC	AEC/VEC/IKS	OJT/FP/CEP /CC/RP	Total Credits	Degree/Cum. Cr. MEME
	Course-1	**Course-2**	**Course-3**						
SEM I (4.5)	DSC-I(2) DSC-II (2) DSC P-I(2)	DSC-I(2) DSC-II (2) DSC P-I(2)	DSC-I(2) DSC-II (2) DSC P-I(2)	OE-1(2) (T/P)		IKS-I(2)		**22**	**UG Certificate 44**
SEM II (4.5)	DSC-III(2) DSC-IV (2) DSC P-II(2)	DSC-III(2) DSC-IV (2) DSC P-II(2)	DSC-III(2) DSC-IV (2) DSC P-II(2)	OE-2(2) (T/P)		VEC-I(2) (Democracy, Election and Constitution)		**22**	
Credits	**8(T)+4(P)=12**	**8(T)+4(P)=12**	**8(T)+4(P)=12**	**2+2=4 (T/P)**	**--**	**2+2=4**	**--**	**44**	**Exit Option:4 credits NSQF/Internship/Skill courses**

EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OFPAPERS- (FOR REVISED SYLLABUS)
(Introduced from June 2024 onwards)

Old Syllabus (Semester pattern)			**Revised Syllabus (Semester pattern)**	
Paper No.	**Title of Old Paper**	**Semester No**	**Paper No.**	**Title of New Paper**
I	Microbes, Algae and Biofertilizers	**I**	**DSC-I**	Phycology and Microbiology
II	Cell biology and Analytical Techniques	**I**	**DSC-II**	Biomolecules and Cell Biology
III	Mycology, Phyto pathologyand Mushroom Cultivation	**II**	**DSC-III**	Mycology and Phytopathology
I V	Archegoniate (Bryophytes, Pteridophytes and Gymnosperms)	**II**	**DSC-IV**	Archegoniate

13. SPECIAL INSTRUCTIONS, IF ANY. --- Nil

Semester- I

Botany Paper: DSC- I: Phycology and Microbiology

CREDIT: 2. LECTURE HOURS; 2 PER WEEK; MARKS: 50

MODULE	SUB-MODULE	TOPICS	LECTURE PERIOD
1	**Phycology**		
	1. Algae	i) General characteristics ii) Diversity with respect to habit and habitats iii) Economic importance iv) Classification (as per G. M. Smith, 1955) up to classes v)Life cycle (excluding developmental stages of sex organs) of the following types a) Cyanophyceae: *Nostoc* b) Chlorophyceae: *Spirogyra*	14
2	**Microbiology**		
	2.1 Viruses	i) Discovery and General characteristics ii) General structure of viruses: Helical, Icosahedral and Complex iii) Types of viruses- DNA viruses (T- Phage), RNA viruses (TMV) iv) Economic importance	08
	2.2 Bacteria	i) Discovery and General characteristics ii) Cell structure iii) Forms of bacteria based on shapes iv) Reproduction – vegetative, asexual and recombination (conjugation) vi) Economic importance	08
Total Lectures			**30**

SEMESTER –I

Botany Paper: DSC- II : Biomolecules and Cell Biology

CREDIT: 2. LECTURE HOURS; 2 PER WEEK; MARKS: 50

MODULE	SUB-MODULE	TOPICS	LECTURE PERIOD
1.	**Biomolecules**		
	1.1 Carbohydrates	Introduction**,** Nomenclature, classification and definition of Monosaccharides, Disaccharides, Oligosaccharides and Polysaccharides with one example	**04**
	1.2 Lipids	Introduction, Definition, Properties and Significance.	**03**
	1.3 Proteins	Introduction, Definition, Properties and Biological role of proteins.	**03**
	1.4 Nucleic acids	Introduction, Watson and Crick model of DNA, Types of RNA and Role of nucleic acids.	**05**
2.	**The cell**		
	2.1 Cell	Introduction, Structure of prokaryotic and eukaryotic cells.	**02**
	2.2 Cell wall and plasma membrane	Introduction, structure and function of Plant cell wall. Plasma membrane: fluid mosaic model.	**03**
	2.3 Cell division	Cell cycle, mitosis, meiosis and significance	**05**
	2.4. Cell Organelles	Structure and functions of Nucleus, Chloroplast, Mitochondria, Ribosomes, Peroxisomes, Glyoxisome	**05**
Total Lectures			**30**

SEMESTER –II
Botany Paper: DSC- III : Mycology and Phytopathology

CREDIT: 2. LECTURE HOURS; 2 PER WEEK; MARKS: 50

MODULE	SUB-MODULE	TOPICS	LECTURE PERIOD
1.	**Mycology**		
	1.1Fungi – A)	i) General characters of fungi ii) Classification of fungi up to class as per Ainsworth (1973). iii) Economic importance	**05**
	B)	Life cycle (excluding developmental stages of sex organs) of the following types- a) Zygomycotina: *Mucor* b) Ascomycotina: *Penicillium*	**10**
	1.2Lichens	i) Occurrence and General characters ii) Nature of association iii) Types of lichens (Crustose, Foliose and Fruticose) iv) Economic importance	**04**
2	**Phytopathology**		
	2.1 Concepts in Phytopathology	i) Introduction to phytopathology ii) Plant disease triangle components. iii) Koch's postulate iv) Terminology of plant Diseases - Localized, Systemic, Soil borne, Air borne, Seed borne, Endemic, Epidemic, Sporadic diseases. v) General symptoms of plant diseases- (Leaf spot, Blight, damping off, wilting, Dieback, Cankers, Chlorosis, Smut, Rust, Powdery mildew.	**06**
	2.2 Plant diseases	i) Study of following plant diseases with respect to symptoms and control measures- **a) Viral** – Yellow vein mosaic of Bhendi **b) Bacterial** – Citrus Canker **c) Fungal** – White rust of crucifers **d) Mycoplasma (MLO)-** Grassy shoot of sugarcane	**05**
Total Lectures			**30**

SEMESTER –II

Botany Paper: DSC- IV: Archegoniate

CREDIT: 2. LECTURE HOURS; 2 PER WEEK; MARKS: 50

MODULE	SUB-MODULE	TOPICS	LECTURE PERIOD
1.	**Archegoniate**		
	1.1 Bryophytes	i) General characters and importance ii) Diversity with respect to habitats iii) Classification as per G.M. Smith (1955) up to classes iv) Important features and life history (excluding developmental stages) of ***Funaria***	**10**
	1.2 Pteridophytes	i) General characters and importance ii)Classification as per G.M. Smith (1955) up to classes Morphology, anatomy (leaf and stem) and life cycle (excluding developmental stages sex organs) of ***Pteris***	**10**
	1.3 Gymnosperms	i) General characters and importance ii) Classification as per Sporne (1965) up to classes Important features and life history (excluding developmental stages) of ***Cycas***	**10**
Total Lectures			**30**

Nature of theory question paper and scheme of marking: Total 40 Marks/ Per paper

Q. 1. Multiple choices questions (8-questions). 8 Marks

Q. 2. Attempt any two of the following (out of three). 16 Marks

Q. 3. Write short notes any four of the following (out of six). 16 Marks

Follow the rules of Shivaji University Kolhapur regarding NEP-2020 syllabus and examination.

Semester I

Practical based on paper I and II (DSC-P I)

Total Marks 50

1. Study of compound and dissecting microscope.
2. Study of T-Phage and TMV viruses with the help of Electron microphotographs/models
3. Study of Bacterial forms (Temporary / permanent slides/ photographs).
4. Study of vegetative and reproductive structures of *Nostoc* and Spirogyra
5. Study of Qualitative tests for carbohydrates, lipids and proteins (Any two test of each)
6. Study of plant cell structure with the help of epidermal peel
7. Study of mitosis
8. Study of meiosis
9. Study of cell organelles with the help of microphotograph/model
10. Study the effect of organic solvent on permeability of plasma membrane.
11. Study the effect of temperature on the activity of peroxisome.
12. Botanical excursion.

Semester II

Practical based on paper III and IV (DSC-P II)

Total Marks 50

1. Study of *Mucor*
2. Study of *Penicillium*
3. Study of types of Lichens
4. Study of any four general symptoms on plant diseases (As per theory)
5. Study of bacterial plant disease – Citrus canker
6. Study of Viral plant disease – Yellow vein mosaic of Bhendi
7. Study of Mycoplasmal plant disease – Grassy Shoot of Sugarcane
8. Study of fungal plant disease – White rust of Crucifers
9. Study of vegetative and reproductive structures of *Funaria*
10. Study of vegetative and reproductive structures of *Pteris*
11. Study of vegetative and reproductive structures of *Cycas*
12. Submission of plant diseases.

Course Outcomes

CO1. Students will able to recognize the structure , types and multiplication of viruses.

CO2. Students will able to understand the bacterial types, structure and mode reproduction

CO3. Students will able to identify the different types of algae and their importance in day today life.

CO4. Students will able develop the skills for the production of different type of Bio fertilizers ,

CO5. Students will able to distinguish the prokaryotic and eukaryotic organisms and acquire the knowledge of different plant cell organelles and its role in the plant body.

CO6. Students will able to understand the different types of cell division and it's phases.

CO7. Students will able to handle all types of microscope.

CO8. Students will able to develop a skill in the chromatography techniques.

CO9. Students will able to identify and classify the different fungi and also realize the economic importance of fungi.

CO10. Students will able to identify the lichens on the basis of morphology and to know the medicinal value of the lichens.

CO11. Students will be able to recognize the different plant diseases and their management.

CO12. Students will able to develops the soft skill technique in the Mushroom Cultivation and realize the commercial status of the mushrooms.

CO13. Students will able to identify the bryophytes their importance.

CO14. Students will able to recognize the characters and ecological importance of pteridophytes.

CO15. Students will be able to identify, classify the gymnosperms and understand the Economic importance of gymnosperms.

List of Books Recommended for B. Sc. I Botany

Algae –

1. Introductory Phycology. Kumar, H. D. 1988, Affiliated East-West Press Ltd., New York.
2. Algae - Kumar H. D. and H. N. Singh (1991)
3. Algae - Sharma O. P. (1986)
4. Algae - Pandey B. P. (1994)
5. A Text book of Algae - Chopra G. L. (1969)
6. A Text book of Algae - Kumar H. D., Singh H. N. (1977)
7. A Text book of Botany - V. Singh, P. C. Pandey, Jain D. K. (1999)
8. A Text book of Botany Vol. I – Pandey S. N., S. P. Misra, P. S. Trivedi (1.982)
9. A Treatise on Algae - K. N. Bhatia (1980)

Fungi –

1. A Hand book of Lichens - D. D. Awasthi (2000)
2. An Introduction to Fungi - Dube H. C. (1990)
3. Morphology of Plants and Fungi --Blod, H.C., Aloxopoulos, G. J. and Delevoryas, T. 1980. (4th Edition) Harper and Foul Co., New York.
4. An Introduction to Fungi.--Dube, H. C. 1990. Vikas Publishing House Pvt. Ltd.,Delhi.
5. Cryptogamic Botany Vol. I & II (2nd Edition), Gilbert, M. S. 1985. Tata McgrawHill Publishing Co., Ltd New Delhi.
6. Fungi- Vashishtha B. R. (1996)
7. Fungi- Pandey B. P. (1994)
8. Introduction to Fungi - Sundrarajan (2001)

9. Introductory Mycology - C. J. Alexopoulos, C. W. Mims, M. Blackwell
10. Cryptogamic Botany Vol. I - Algae and Fungi - G. M. Smith (1974)
11. Plant diseases –Singh R. S. (1963).
12. Manual of plant pathology –Padoley S. K. & Mistry P. B.
13. Hand book of field crop diseases- Ny. Vall (1979).
14. Experiments in Microbiology, Plant pathology and Tissue culture- Aneja K. R. (1993).
15. Plant pathology- R. S. Mehrotra, (1980) Dean, Faculty of science, Kurkshetra University, Kurukshetra.
16. Plant Diseases- F.T. Brooks, periodical Expert book Agency, D-42, VivekVihar, Delhi 1100032.
17. Plant diseases –RajaniShrma, Campus books international, 4831/24 Prahlad Street, An sari Road, Daryaganj, New Dehli-110002.
18. Diseases of crop plant in India –Dr. Rangaswami.
19. Plant diseases –R.S. Singh
20. Modern plant pathology – R. S. Bilgrami and H. C. Dube.

Bryophytes –

1. Bryophytes. Puri, P. 1985. Amarm& Sons, Delhi.
2. College Botany - S. Sundararajan (1999)
3. College Botany Vol. I - Gangulee H. C., Das K. S. and Datta C. T. (1991)
4. College Botany Vol. II - Gangulee H. C., Kar A. K. (1999)
5. College Botany Vol. III -- S. K. Mukharji (1990)
6. Cryptogamic Botany Vol. I- G. M. Smith (1955)
7. Cryptogamic Botany: Bryophytes and Pteridophytes - Smith G. C. (1955)

Pteridophytes—

1. An Introduction to Pteridophytes - Rashid A. (1978)
2. An Introduction to Pteridophyta (Diversity and Differentiation) -A. Rashid (1976)
3. A Text book of Pteridophyte – S. N. Pandey, P. S. Trivedi, S. P. Misra (1995)
4. An Introduction to Embryophyta - Parihar N. S. (1961)
5. Morphology and Evolution of Vascular Plants Gifford, E. M. and Foster, A. S. 1989. W.H. Freeman & Co., New York.
6. Morphology of vascular Plant (lower groups) -- A. J. Eames.
7. Illustrated Manual of Ferns of Assam -S. K. Borthakur, P. Deka, K. K. Nath (2000)
8. Pteridophyta – Vascular Cryptogams - P. C. Vashishta (1972)
9. Botany for Degree Students- Pteridophyta (Vascular Cryptogams) - P. C. Vashishta, A. K. Sinha, Anil Kumar – S Chad –Multicolour Illustrative Revised Edition- 2006.

Gymnosperms –

1. Botany for Degree Students- Gymnosperms (Vascular Cryptogams) - P. C. Vashishta, A. K. Sinha, Anil Kumar – S Chad –Multicolour Illustrative Revised Edition- 2006.
2. The Morophology of Gymmosperms. -- Sporne, K. R. 1991. B. I. PublicationsPvt., Bombay, Calcutta, Delhi.
3. Morphology of Gymnosperms -- J. M. Coulter and C. J. Chamberlain.
4. Gymnosperms – Structure & Evolution.--C. J. Chamberlain
5. Morphology of Gymnosperms.--K. R. Sporne.

6. Gymnosperms- Vashishta P. C. (1976)
7. Gymnosperms- C. J. Chamberlein (1966)
8. Indian Gymnosperms in Time and Space - Ramanujan C. G. K. (1979)
9. Origin and Evolution of Gymnosperms - Ed Charles B. Beck (2002)
10. Phylogeny and form in the plant Kingdom - H. C. Dittmer (1964)

Cytology, Microbiology and Analytical Techniques-

1. Plant Cell Biology –Structure and function-Gunning B.E.S and Steer M.W. (1996).
2. Plant Cell Biology-A practical approach.-Harris N. and Oparka K. J. (1994). (IRL-Press of oxford University UK.).
3. Cell Biology- De. Robert et.al. (1982), (Publ. Sundar and Company).
4. Cell Biology –C. B. Powar (1992), Himalaya Publ. House, Delhi.
5. Plant Biochemistry-Cell-Sumps P.K. and Connie's. (1981).
6. Molecular Cell Biology-Albert's B. Bray D. Lewis J. Faff M. Robert K. & Watson J.D. (1999). (Publ. Garlands publishing co-In, New York U.S.A.)
7. Text Book of cell and molecular biology –Gupta P.K. (1999), Rastogi publication, Meerat.
8. Molecular and Cellular Biology-Wolfe S.L. (1993), Wadsworth publishing Company, California, U.S.A.
9. Applied Microbiology- Vinita Kale and Kishore Bhusari (2007) Himalaya Publishing House, Mumbai.
10. Virology- Saravanan P. MJP, Publishers, Chennai. 600005.
11. Chromatographic Methods- Stock, R. and C. B. F. Rince (1978).
12. Biological Techniques- Srivastava, H. S. (1999).

SHIVAJI UNIVERSITY, KOLHAPUR.

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Revised Syllabus For

B. Sc. I Botany (Open Elective)

(Faculty of Science & Technology)

Semester- I Paper –I

And

Semester-II Paper -II

(Theory/Practical Based)

NEP-2020 (2.0) Syllabus to be implemented from July, 2024 onwards.

SEMESTER –I

OPEN ELECTIVE - I: BIOFERTILIZERS AND MANURES

CREDIT: 2. LECTURE HOURS; 2 PER WEEK **MARKS: 50**

MODULE	SUB-MODULE	TOPICS	LECTURE PERIOD
1.	**Biofertilizers**		
	1.1 Introduction	Definition, types and application of Bacterial, Fungal and Algal Biofertilizers	**03**
	1.2 *Rhizobium*	Characteristics, Symbiotic association with legume root nodules, isolation and mass multiplication.	**03**
	1.3 *Azotobacter*	Characteristics and its role as a biofertilizer. Isolation and mass multiplication	**03**
	1.4 Blue green Algae	Characteristics of *Nostoc* and its role as biofertilizer.	**03**
	1.5 *Trichoderma*	Characteristics and applications as a biofertilizer	**03**
2	**Manures**		
	2.1 Green manuring	Introduction and Agronomy of Sunnhemp (*Crotolaria juncea*) and Dhaincha (*Sesbania aculeate*).	**05**
	2.2 Biocompost	Introduction, types and biocomposting methods, Recycling of agricultural waste.	**05**
	2.3 Vermicompost and Vermiwash	Introduction, preparations, and applications.	**05**
Total Lectures			**30**

SEMESTER –II

OPEN ELECTIVE - II: GARDENING TECHNIQUE

CREDIT: 2. LECTURE HOURS; 2 PER WEEK **MARKS: 50**

MODULE	SUB-MODULE	TOPICS	LECTURE PERIOD
1.	**Basics in Gardening**		
	1.1	Definition, objectives and scope of gardening	**02**
	1.2	Types of gardening - landscape and home gardening	**03**
	1.3	Lawns: Types and preparations	**02**
	1.4	Types of creative gardening: Terrarium, Floating Garden, Bottle Garden, Hanging Garden, Vertical Garden, Broken pots.	**06**
	1.5	Potting mixture, Potting and repotting.	**02**
2	**Garden development**		
	2.1	Plant propagation methods - i) Layering –Air layering ii) Grafting –Whip grafting iii) Budding: Patch budding	**03**
	2.2	Applications of PGRs - Gibberellic acid, Auxin, Cytokinin.	**02**
	2.3	Management practices in garden (Fertilization, Irrigation and Weeding)	**02**
	2.4	Important garden plants: Trees (*Lagerstroemia*), climbers (*Bougainvillea*), foliage plants (*Diffenbachia*), Cacti and succulents (*Opuntia* and *Kalanchoe*), Palms (Fan palm), Hedge plants (*Clerodendron*), edge plants (*Duranta*)	**02**
	2.5	Bonsai technique	**02**
	2.6	Management of pests and diseases of Ornamental Plants.	**02**
	2.7	Important gardens in India: Lalbagh (Bangalore), Amrit Udyan (New Delhi) and Lead Botanical Garden (Shivaji University, Kolhapur)	**02**
Total Lectures			**30**

सेमिस्टर-१

ओपन इलेक्टीव - I: जैवीक व सेंद्रिय खतांचा परिचय

(क्रेडिट २, ६० तास) **मार्क्स: ५०**

प्रात्यक्षिक-१: जैवीक व सेंद्रिय खतांचा परिचय

प्रात्यक्षिके

१) जीवाणू वर्गीय जैविक खतांचे प्रकार आणि ओळख करून घेणे

२) बुरशी वर्गीय जैविक खतांची माहिती करून घेणे

३) शेवाळ वर्गीय जैविक खतांचे प्रकार आणि ओळख करून घेणे.

४) फर्ण आणि सपुष्प वनस्पती वर्गीय जैविक खतांची ओळख आणि महत्व जाणून घेणे.

५) जैविक खते तयार करण्यासाठी लागणाऱ्या मूलभूत घटकांची ओळख आणि माहिती करून घेणे.

६) जैविक खते तयार करण्याची पद्धत अभ्यासने .

७) जैविक खतांचे पॅकिंग आणि लेबलिंग करण्याची पद्धत अभ्यासने

८) हरित खतांचा परिचय करून घेणे

९) जैविक घटकांचे कंपोस्टिंग करणे

१०) गांडूळ खताचा परिचय व महत्व जाणून घेणे.

११) गांडूळ खत आणि व्हर्मीवॉश तयार करण्याची पद्धत अभ्यासने.

१२) जैविक व अजैविक खते तयार करणाऱ्या केंद्रांना भेट देणे

सेमिस्टर-२

ओपन इलेक्टीव-२ : बागकाम तंत्रज्ञान

(क्रेडिट २, ६० तास) **मार्क्स: ५०**

प्रात्यक्षिक-२ बागकाम तंत्रज्ञान

१) बागेचे प्रकार अभ्यासाने तसेच बागेचा नकाशा तयार करणे

२) लॉन चे प्रकार आणि लॉन तयार करण्याची पद्धत अभ्यासणे.

३) रोप लागवडीसाठी खत, माती तसेच इतर घटकांचे मिश्रण तयार करणे व कुंडी भरणे

४) अंतर्गत गृह सजावटीसाठी टेरॅरियम, बॉटल गार्डन सारखे विविध नाविन्यपूर्ण बागेचे प्रकार अभ्यासणे

५) बागेतील वनस्पतींच्या गतिमान वाढीसाठी विविध वाढ संप्रेरकांच्य परिणामांचा अभ्यास करणे

६) गुटी कलम. बडींग, ग्राफ्टिंग चा अभ्यास करणे

७) जैविक कुंपणासाठी वापरल्या जाणाऱ्या विविध वनस्पतींहि अभ्यास करणे

८) बागेमध्ये लागवडीसाठी वापरल्या जाणाऱ्या विविध शोभिवंत झाडांचा अभ्यास करणे

९) बागेमधील सिंचन व्यवस्था तसेच तण निर्मूलन याचा अभ्यास करणे

१०) बागेमधील वनस्पतीवर आढळणाऱ्या सर्वसाधारण बुरशींचा अभ्यास करणे.

११) बागेतील वनस्पतीवर पडणाऱ्या मावा वर्गीय किडींचा अभ्यास करणे.

१२) तणनाशक, कीटकनाशक व संप्ररके यांचे प्रमाणित मिश्रण तयार करणे.

१३) महाविद्यालयाच्या नजीकच्या नावाजलेल्या बागेला भेट देणे.

अभासक्रमाचे अपेक्षित परिणाम:

अभ्यासक्रम व्यवस्थित रित्या पूर्ण केल्यानंतर मुलांना खालील गोष्टींचा फायदा होईल

१. मुलांना बागकामतील संधी, बागेची गरज आणि बागेचे महत्त्व या याबाबतीत ज्ञान आत्मसात होईल.

२ . मुलांना विविध प्रकारच्या बागा तयार करण्याचे तंत्रज्ञान अवगत होईल.