

Skill Course II Offered by Botany Department- Organic farming

CERTIFICATE COURSE B.Sc.-I		
Programme: <i>Certificate Course</i>		Year: I Semester: II/Paper-II
Offered by: Botany		
Course Code: B04	Course Title: Organic farming ✓	
Course outcomes: After the completion of the course the students will be able: <div><div>1. Understand the instruments, techniques, lab etiquettes and good lab practices for field work</div><div>2. Develop skills for identifying organic supplements and preparing them from raw materials for safe agriculture/horticulture.</div><div>3. Will understand the pathology associated with crops and their pre-harvest & post- harvest management.</div><div>4. Can start own enterprise on organic farming</div></div>		
Credits:3	Skill Development Optional	
Max. Marks: 25+75	Min. Passing Marks:	
Total No. of Lectures-Tutorials-Practical (in labs per week): 0-1-2		

Unit		No. of T/P (15+60hrs)
I.	1. Introduction to organic farming and its significance 2. Concepts and Principles of Organic farming 3. Key indicators for organic farming, sustainable agriculture and climate change	4T+6P
II	1. Input management. 2. compost production, 3. vermicomposting, 4. Compost quality, 5. Compost utilization and marketing	2T+ 24P
III	1. Organic crop management: field crops, horticulture and plantation crops 2. Plant protection measures, biopesticides, natural predators, cultural practice	3T+ 6P
IV	1. Rotation design for organic system, 2. Transition to organic agriculture, 3. Farming system	3T+12P
V	1. Quality analysis of organic foods, Antioxidants and their natural source, organic food and human health 2. Standards of organic food and marketing	3T+ 12P

Suggested Readings:

Course Books published in Hindi,English

- 1 प्रयोगात्मक वनस्पति विज्ञान भाग-2 लेखक अशोक बेंद्रे तथा अशोक कुमार प्रकाशन रस्तोगी प्रकाशन मेरठ।
- 2 प्रायोगिक वनस्पति विज्ञान-2 Dhankar - Sharma – Trivedi ISBN Code: 978-81-8142-697-0 65, RBD Publishing House Shivaji Nagar Civil Lines, Jaipur - 302006 (Rajasthan)
- 3 प्रायोगिक वनस्पति विज्ञान बी.एस.सी.-2 एस बी अग्रवाल प्रकाशक : शिवलाल अग्रवाल एण्ड कम्पनी प्रकाशित वर्ष : 2018
- 4 Practical Botany (Part 2) ISBN #:81-301-0008-8 Sunil D Purohit, Gotam K Kukda & Anamika Singhvi Edition:2013 Apex Publishing House Durga Nursery Road, Udaipur, Rajasthan (bilingual)

This course can be opted as an elective by the students of following subjects: Open to all but special for B.Sc. Biotech, B.Sc. Agriculture, B.A. (Curators), B.A. Archaeology, B.A. Geology, BAMS.

Course prerequisites:

Prerequisites: To study this course, a student must have qualified 10+2 from any recognized board.

Techniques: Smart and Interactive Class

Other Requisites: Video collection, Books, CDs, Access to On-line resources, Display Charts
Practical: Drumstick, green, still, dead leaves, shed dry leaves, vessel, bamboo stick



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<https://www.classcentral.com/course/swayam-organic-farming-for-sustainable-agricultural-production-14222>
<https://community.plantae.org/tags/mooc>
futurelearn.com/courses/teaching-biology-inspiring-students-with-plants-in-science

Suggested Continuous Evaluation Methods:

Continuous Internal Evaluation shall be based on allotted Assignment and Class Tests. The marks shall be as follows:

Internal Assessment	Marks
Class Interaction	5
Quiz	5
Seminar/Assignment	7
Minor field work/excursion/lab visit/technology dissemination etc.	8



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Objective:

To learn about philosophy of yoga education and significance of corrective exercise for fostering healthy natural life.

1. General Objectives of the Course:

1. To enable student to become competent and committed professionals willing to perform as Yoga trainer.
2. To make student to use competencies and skills needed for becoming an effective Yoga trainer.
3. To enable student to understand the types of the Yoga.
4. To acquaint student with the practical knowledge of Yoga Sana, Kriyas, Bandhas, Mudras, Yogic Therapy and Pranayama
5. To enable student to prepare the Yoga program.
6. To popularize yoga and corrective education among the masses.
7. Promoting health awareness towards holistic approach of health.
8. To promote preventive and correctives measures for sound health.
9. To promote healthy citizenry.
10. To know advanced levels of yoga education and rehabilitation

2. Duration of the Course:

The duration of the course shall be of four months. (75 contact hours ,1 credit theory + 2 credit practical, Total 3 credits) Each working day shall consist of one hour of Practical work /theory.

4. Eligibility for Admission:

Any Candidate who has passed XII std. or any other equivalent examination will be eligible for the admission to the Certificate Course in Yoga and corrective. Provided other conditions of admissions are fulfilled.

5. Medium of Instruction and Examination:

- a. Medium of Instruction will be Hindi and/or English and question papers shall be set in Hindi & English.
- b. The Certificate Course consists of Theory, and practical training. The Theory paper is of 50 marks. And practical of 50 marks. Based on MCQ.

6. Eligibility for appearing at Certificate Course examination:

Student teachers should keep the terms with at least 90% attendance. She should Complete all the practical and other work expected in all parts of the syllabus.

Total Seats: 20 Seats.

Syllabus

Unit no 1

Fundamental concepts

2 Hour

1. Definition Aim and objectives of Human life according to Indian philosophy, Purusharth,
2. Concept of Pancha Koshas, Chakras, Aura, Nadies, Kundalini
3. Contribution in Yoga by Osho, Swami Rama, Maharishi Mahesh Yogi, Swami Sivananda Sarswati.
4. Importance and impact of Yoga regarding – Gyan (True and ultimate knowledge), Awareness, Inner vision, Siddhis, Five Pranas and Chitta- control. Role of Ashtanga Yoga Yamas, Niyama's, Asana, Pranayama and Dhyana, Dharana, Pratyahara
5. Physical, Mental, Emotional, and spiritual health and disorders like Anxiety, Depression, Frustration, Conflict, and depression.

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8. Tackling ill-effects of Frustration: Anxiety and Conflict through modern and Yogic Methods, Meditation Techniques Surya namaskar

Unit no 2 Introduction to Human Body and systems: 1 Hour

In brief with special reference to Respiratory, Digestive, Muscular and Nervous systems. Endocrinal system: -Nature of B.M.R., Fatigue, Immunity, Defense mechanism, Resistance power. Human Bio-chemistry Sugar level, Cholesterol, Fat, Urea their significance and related tests.

Unit no 3 Yoga and Ayurvedic: - 1 Hour

Its relationship, similarities, and differences, Ayurvedic concept of Yoga. Ayurveda concept of Tridoshas, Dhatus and Malas. Yogic Impact on their healthy nature.

Unit no 4 Yoga and Naturopathy: - 1 Hour

Its relationship, similarities and differences, Naturopathic concept of foreign matter, un-natural living style and Yoga impact on it.

Unit no 5 Meaning, Causes, symptoms and therapeutic value of Yoga practices in following disorders: - 4 Hour.

- I. Digestive disorders: Obesity, Indigestion, Gastric/ acidity problem, constipation. Piles.
- II. Respiratory and cardio-vascular disorders: Asthma, cold, High/low blood Pressure.
- III. Hormonal and Skelton disorders: Diabetes, Thyroid's imbalance, cervical spondylosis, backache, sciatica, arthritis.
- IV. Yogic concept of Holistic Health, Role of various Yogic practices on health at the level of body, mind, and soul. Stress – its causes, symptoms, consequences on body and mind and yogic management of stress.
- V. Exploration of Yoga: Yogic events- seminars, conferences, yoga centers, yoga Magazines, yoga higher education. Hi-tech in yoga.
- VI. Yogic Therapy through Traditional Understanding.
- VII. Stress Management: Modern and Yogic perspectives

Unit no 6 Breathing 1 Hour

- a. Bandhas and Mudras Introduction to Kriyas, Mudras and Bandhas in brief.
- b. **Asanas Asana** - Definition and Classification, Similarities, and dissimilarities between Asana and Exercise
- c. **Pranayama** - Definition and Classification. Difference between pranayama and deep breathing. Importance of Rechaka, Kumbhaka, Puraka.
- d. **Kriyas Pranayama** - Definition and Classification. Difference between pranayama and deep (Corrective)

Unit no 7 Anatomy 1 Hour

1. Osteology and myology, functional anatomy, kinesiology and anthropology.
2. Neuroanatomy-Brain, spinal cord, Autonomic nervous system
3. Cardiovascular system, Respiratory system
4. Histology of bone, cartilage, muscles, nerves.



BIOCHEMISTRY

1 Hour

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General metabolism and nutrition, acid Base balance, kerb cycle Principles of applied physics which avoid injury

Unit no 9

Treatment Modalities

3 Hour

used in physical medicine-general properties and detailed clinical uses of each.

- a) Heat-general physiological properties and mode of action as agent, indication and contraindication, forms of heat therapy –superficial and deep heating including treatment techniques. Emphasis will be given to infrared, Hydrocollator, Paraffin wax bath, convection heating devices, short wave diathermy, microwave diathermy and ultrasonic therapy.
- b) Cold as a therapeutic agent
- c) Ultraviolet radiation
- d) Therapeutic electricity
- e) Hydrotherapy
 - a. Clinical use of massage, manipulation, stretching and traction.
 - b. Prescription of exercise therapy and other supportive measures
 - c. Disability evaluation
 - d. Sports medicine, drugs, rehabilitation of injured athlete
 - e. Rehabilitation management of cases with various systemic disorders neuromuscular
 - f. disability (paralysis, cerebral palsy, spinal cord injuries, muscular dystrophies)
 - g. Orthopedic disability, cardiovascular disability, pulmonary disability
 - h. Urological problems
 - i. Rehabilitation of patients with diseases of back pain
 - j. Rehabilitation of patients with diseases of neck pain
 - k. Rehabilitation of patients with diseases of burns
 - l. Rehabilitation of patients with spondylitis

Practical Training

PRACTICALS: 60 Hour

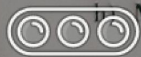
8 Hour

Basic concept of effect of exercise, naturopathy, massages, and diet which can cure the disease, injury, deformity.

Curative concept

16 Hour

- a) **Jal Neti** –SuterNeti, VamanDhauti, Kapalbhathi (Vayu / Vaatkaram), Trataka, Pawan-mukat-series Exercise, Suryanamaskaar,
- b) **Standing Poses:** Taad – Trikon – Katichakarkon, Tiriyank-taad
- c) **Supine laying Poses:** Shav –Uttanpad –Sarvang – Ardhmatsay – Hal – Naditaan.
- d) **Prone Pose:** Makar – Sarp – Ardhshalabh –Dhanur.
- e) **Sitting Poses:** Vajar, Padam – Janushiras –Vakar – Bhadar – Sidh – Sukh.
- f) **Pranayama:** Correct Breathing Exercise, Anulome-vilom, Surya-bhedhan, Ujjayee, Sheetli, Sheetkari and Bhramari.
- g) **Bandhas :** Trio Bandhas Mudras : Vipritkarni, Kaki, Taragi, Shambvi, Chin, Gyan (Jnana)
- h) **Meditation :** Mindful, Vipasan, Jyotirbindhu and Yog-nindra.



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ASANAS:

1. Shrishasana
2. Crocodile Practices (Four variations)
3. Pavanmuktasana
4. Naukasana
5. Iparitakarani
6. Sarvangasana
7. Matsyasana
8. Halasan
9. Karnapidasana
10. Bhujangasana
11. Shalabhasana
12. Sarpasana
13. Dhanurasana
14. Vakrasana
30. Ugrasana
32. Janushriasana
34. Muktasana
36. Guptasana
38. Uttanamandukasana
40. Padangusthasana
42. Bhadrasana
44. Ekpadaskandhasna
46. Chakrasana (Backward)
48. Tadasana
50. Utkatasana
52. Vatayanasana
54. Shirh-padangusthasana
56. Padmasana
58. Swastikasana
60. Makarasana

15. Ardha-Matsyendrasana
16. Paschimatanasana
17. Supta Vajrasanai
18. Yoga Mudra
19. Simhasana
20. Gomukhasana
21. Matsyendrasana
22. Mayurasana
23. Kukkutasana
24. Uttana Kurmasana
25. Ushtrasana
27. Padma – Bakasana
28. Baddha –padmasana
29. Akarmadhanurasana
31. Parvatasana
33. Tolangulasana
35. Virasana
37. Sankatasana
39. Vrishabhasana
41. Garbhasana
43. Kapotasana
45. Chakrasana (Sideward)
47. Virkshasana
49. Pada - hastasana
51. Natarajasana
53. Garudasana
55. Vajrasana
57. Siddhasana
59. Shavasana
61. Brahmamudra

30 Hour

B. PRANAYAMA

2 Hour

1. Anuloma-viloma
2. Ujjayi
3. Shitali
4. Sitkari
5. Bhastrika
6. Bhramari
7. Suryabhedana
8. Chandrabhedana
9. Murccha
10. Plavini

C. BANDHAS AND MUDRAS

2 Hour

1. Jalandhara Bandha
2. Uddiyana Bandha
3. Jicha Bandha
4. Mula Bandha

D. KRIYAS

2 Hour

1. JalaNeti
2. Sutra Neti
3. Dhauti (Vamana, Danda, Vastra)
4. Nauli
5. Kapalabhati
7. Trataka

REFERENCES

1. Gupta, S.N. Das. (1987). Yoga Philosophy in Relation to other system of Indian Thought, New Delhi, Moti Lal Banarsidass.
2. Chinmayananda, Swami. (2006). The Holy Geeta. Mumbai, Central Chinmaya Mission Trust.
3. Priyanna, M., (1995). The Essentials of Indian Philosophy. New Delhi, Motilal Banarasi das Publishers.
4. Iyengar, B.K.S. (2005). Light on life. Oxford, Pan Macmillan Ltd.
5. Iyengar, B.K.S. (2009). The Tree of Yoga. New Delhi, Harper Collins.
6. Iyengar, B.K.S. (2009). The Tree of Yoga. New Delhi, Harper Collins.
7. Iyengar, B.K.S. (2009). The Tree of Yoga. New Delhi, Harper Collins.



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