



Sonopant Dandekar Shikshan Mandali's
Sonopant Dandekar Arts, V.S. Apte Commerce
& M.H. Mehta Science College, Palghar

Department of Botany
Presents
Certificate Course in Functional Foods
And Nutraceuticals

Academic Year: 2022-23

CERTIFICATE COURSE IN FUNCTIONAL FOODS AND NUTRACEUTICALS

Objectives-

1. To make the students aware about functional foods and nutraceuticals
2. To make the students aware about the potential health implications and mechanism of functional foods
3. To make the students aware about applications of functional foods in the industry.

Learning Outcomes:

1. The student shall be able to describe what are functional foods and nutraceuticals.
2. The student shall be able to classify the functional foods.
3. The student shall be able to discuss the potential health implications and mechanism of functional foods.
4. The student shall be able to discuss the applications of functional foods in the industry.

Duration: 40 hrs.

Fees: Free for all

Intake capacity: 30 students

Total marks: 75 (25 marks theory exam and 50 marks practical exam)

Eligibility: FY and SY students

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Proposal

From
Dr. Shilpa M. Gharat
Head of Dept. of Biotechnology
Sonopant Dandekar College
Palghar

Date: 15/10/2022

To,
The Principal,
S.D.S.M. College,
Palghar.

Subject: Permission for conducting a short term Certificate course in
'FUNCTIONAL FOODS AND NUTRACEUTICALS'.

Respected Sir,

With the advent and flourish in the field of technology, there has been a huge development in the opportunities for specialization in various fields in Biotechnology at and after graduate level. This is an attempt to introduce the students to be knowledgeable about such new avenues available in the Subject of Biotechnology. For the same, we request you to grant us permission to conduct a Certificate course in **'FUNCTIONAL FOODS AND NUTRACEUTICALS'.**

This course will be made available to interested F.Y. B.Sc. and S.Y. B.Sc. students of the Biotechnology dept.

Requesting you to grant permission for the same.

Thanking you,

Yours faithfully

Shilpa P

Dr. Shilpa Gharat

Allowed
Kulme
15/10/2022

Brochure



SONOPANT DANDEKAR SHIKSHAN MANDALI'S
Sonopant Dandekar Arts, V. S. Apte Commerce and
M. H. Mehta Science College, Palghar

Certificate course in functional foods and Nutraceuticals Organized by Shri Dahyabhai Amritlal Shah Institute of Biotechnology



OBJECTIVES

- To make the students aware about functional foods and nutraceuticals
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- To make the students aware about applications of functional foods in the industry

LEARNING OUTCOMES

1. The student shall be able to describe what are functional foods and nutraceuticals.
2. The student shall be able to classify the functional foods.
3. The student shall be able to discuss the potential health implications and mechanism of functional foods.
4. The student shall be able to discuss the applications of functional foods in the industry.

Details of the Course

Duration - 40 hours
Fees - Free for all
Intake capacity - 30
Eligibility - FY & SY students

Contact

7028152045 / 7820957044

Google form registration

https://docs.google.com/forms/d/e/1FAIpQLScvHxkWom8RDZJQNChcSOFsJC0xg-IpqDhVzINZZ0EkVqvO5w/viewform?usp=sf_link



Sonopant Dandekar Shikshan Mandali's
Sonopant Dandekar Arts,
V. S. Apte Commerce &
M. H. Mehta Science College, Palghar

Estb.: 14 August 1968

Dr. Kiran Save, Principal

Kharekuran Road, Palghar (W), Tal. & Dist. Palghar,
Maharashtra - 401 404, INDIA
Tel. : +91 - 2525 - 252163
Principal : +91 - 2525 - 252317
Email : sdscollege@yahoo.com
Web. : www.sdscollege.com

Date: 17th October, 2022

NOTICE

DEPARTMENT OF BIOTECHNOLOGY CERTIFICATE COURSE IN FUNCTIONAL FOODS AND NUTRACEUTICALS

All the students of F.Y.BSC & S.Y.BSC OF Bio-technology department are hereby informed that Department of Biotechnology is organizing a Certificate Course on In Functional Foods and Nutraceuticals for all the students to embrace, learn analytical skills to measure factors. Enrolment for the above course should be done on or before 20th October, 2022. After successful completion of the course, participants will receive the Certificate from college.

Kindly Contact for more Details:

7028152045/7820957044

Dr. Shilpa Gharat
Head & Course Coordinator
Department of Biotechnology

Prof. Mahesh Deshmukh
IQAC Coordinator

Dr. Kiran Save
Principal
PRINCIPAL
Sonopant Dandekar Arts College,
V.S. Apte Commerce College &
M.H. Mehta Science College
PALGHAR (W.R.)
Dist. Palghar, Pin-401404

Certificate Course Syllabus and Expert Committee:

Sr. No.	Name	Designation
1.	Dr. Kiran J. Save	Principal, Sonopant Dandekar College, Palghar
2.	Dr. Shilpa M. Gharat	Course Coordinator, Assistant Professor and Head, Dept. of Biotechnology
3.	Prof. Mahesh Deshmukh	IQAC coordinator, Sonopant Dandekar College, Palghar
4.	Dr. Hemant Pednekar	Associate Professor, Ex. Principal Sonopant Dandekar College, Palghar and Head Dept. of Geography,
5.	Dr. Pankaj Goghri	Professor and Head, Dept. of Botany, N.B. MEHTA SCIENCE COLLEGE, BORDI - 401 701

List of subject teachers / Expertise faculty

Sr. No.	Name	Designation
1.	Dr. Kiran J. Save	Principal, Sonopant Dandekar College, Palghar
2.	Dr. Shilpa M. Gharat	Course Coordinator, Assistant Professor and Head, Dept. of Biotechnology
3.	Dr. Hemant Pednekar	Expert in environmental awareness Ex. Principal and Head Dept.
		Geography, Sonopant Dandekar College, Palghar
4.	Dr. Pankaj Ghogri	Expert in environmental analysis Associate Professor and Head, Dept. of Botany, N.B. MEHTA SCIENCE COLLEGE, BORDI - 401 701
5.	Shailaja Palan	Expert in environmental studies, Asst. professor, Sonopant Dandekar College, Palghar

SYLLABUS

Nutraceuticals and Functional Foods:

Unit 1: Nutraceuticals and Functional Foods- Definition, characteristic features, and classification.

Unit 2: Sources of nutraceuticals (with examples e.g. microbes, plants, algae, animals).

Unit 3: Applications of nutraceuticals in human health and nutrition- health effects of commonly used nutraceuticals and functional foods (case studies).

Unit 4: Safety and Regulatory guidelines relating to use of nutraceuticals.

Practical's:

1. Estimation of total sugars from food products (dairy, fruit juices, bakery)
2. Determination of acid value of natural fats and oils.
3. Estimation of vitamin B
4. To study nutritional components (protein, carbohydrate, secondary metabolites, lipids)
5. Study of nutraceuticals important plants like Zinziber, Curcuma, Alovera, Asparagus, Ocimum etc.
6. Estimation of antioxidant property of phytochemical by DPPH.
7. Qualitative test for tannins, phenols, isoflavones, alkaloids.
8. Estimation of food preservatives/additives (Parabens) from food sample.
9. Detection of food adulterants.

References

- Handbook of Nutraceuticals Volume 1 - Ingredients, Formulations, and Applications- by Yashwant Pathak. CRC Press
- Nutraceuticals and Functional Foods in Human Health and Disease Prevention – by Debasis BagchiHarry G. PreussAnand Swaroop. CRC Press
- Genomics, Proteomics and Metabolomics in Nutraceuticals and Functional Foods, Second Edition- by Debasis Bagchi, Anand Swaroop, and Manashi Bagchi. Wiley Blackwell publications

Certificate course in functional foods and Nutraceuticals
Batch I- S.Y. Biotech

Sr. No.	Name of the teacher	Topics allotted	No. of lectures
1	Dr. Shailaja Palan	Nutraceuticals and Functional Foods- Definition, characteristic Practical- Estimation of total sugars from food products (dairy, fruit juices, bakery)	01 01
2	Dr. Shilpa Gharat	Nutraceuticals and Functional Foods- features, and classification.	02
3	Ishwari Mehta	Sources of nutraceuticals- microbes Practical- Determination of acid value of natural fats and oils.	01 01
4	Apurva Save	Sources of nutraceuticals- plants Sources of nutraceuticals- algae Practical- Estimation of vitamin B	02 01
5	Ketaki Rahalkar	Sources of nutraceuticals- animals Practical- To study nutritional components (protein, carbohydrate, secondary metabolites, lipids)	01 01
6	Niyati Patil	Applications of nutraceuticals in human health Practical- Study of nutraceuticals important plants like Zinziber, Curcuma, Alovera, Asparagus, Ocimum etc.	01 01

7	Lisa Sam	Applications of nutraceuticals in nutrition health effects of commonly used nutraceuticals and case studies Practical- Estimation of antioxidant property of phytochemical by DPPH.	02 01
8	Runali Raut	health effects of commonly used functional foods and case studies Practical- Qualitative test for tannins, phenols, isoflavones, alkaloids.	01 01
9	Hardik Churi	Safety issues relating to use of nutraceuticals. Practical- Estimation of food preservatives/additives (Parabens) from food sample.	02 01
10	Riddhi Bisht	Regulatory guidelines relating to use of nutraceuticals. Practical- Detection of food adulterants.	02 01

**Certificate course in functional foods and Nutraceuticals
Batch II- F.Y.Biotech**

Sr. No.	Name of the teacher	Topics allotted	No. of lectures
1	Dr. Shailaja Palan	Nutraceuticals and Functional Foods- Definition, characteristic Practical- Estimation of total sugars from food products (dairy, fruit juices, bakery)	01 01
2	Dr. Shilpa Gharat	Nutraceuticals and Functional Foods- features, and classification.	02
3	Ishwari Mehta	Sources of nutraceuticals- microbes Practical- Determination of acid value of natural fats and oils.	01 01
4	Apurva Save	Sources of nutraceuticals- plants Sources of nutraceuticals- algae Practical- Estimation of vitamin B	02 01
5	Ketaki Rahalkar	Sources of nutraceuticals- animals Practical- To study nutritional components (protein, carbohydrate, secondary metabolites, lipids)	01 01
6	Niyati Patil	Applications of nutraceuticals in human health Practical- Study of nutraceuticals important plants like Zinziber, Curcuma, Alovera, Asparagus, Ocimum etc.	01 01

7	Lisa Sam	Applications of nutraceuticals in nutrition health effects of commonly used nutraceuticals and case studies Practical- Estimation of antioxidant property of phytochemical by DPPH.	02 01
8	Runali Raut	health effects of commonly used functional foods and case studies Practical- Qualitative test for tannins, phenols, isoflavones, alkaloids.	01 01
9	Hardik Churi	Safety issues relating to use of nutraceuticals. Practical- Estimation of food preservatives/additives (Parabens) from food sample.	02 01
10	Riddhi Bisht	Regulatory guidelines relating to use of nutraceuticals. Practical- Detection of food adulterants.	02 01

Student Enrollment List

Certificate Course in Functional Foods and Nutraceuticals

Academic Year 2022-23

List of students Enrolled

Sr.No.	Name of Students	Class
1	Ayush Kanekar	F.Y. Biotech
2	Mitali Macchi	F.Y. Biotech
3	Isha Gade	F.Y. Biotech
4	Arpita Patil	F.Y. Biotech
5	Vishawambhara Dhanu	F.Y. Biotech
6	Sanika Patil	F.Y. Biotech
7	Kavya Patil	F.Y. Biotech
8	Jay Dodake	F.Y. Biotech
9	Sushil Harijan	F.Y. Biotech
10	Tripti Pandey	F.Y. Biotech
11	Anjali Tiwari	F.Y. Biotech
12	Vishaka Patel	F.Y. Biotech
13	Dhanashree Kumbhare	F.Y. Biotech
14	Pushkar Gawale	F.Y. Biotech
15	Aishwarya Rangashe	F.Y. Biotech
16	Radha Yadav	F.Y. Biotech
17	Pavan Pawade	F.Y. Biotech
18	Rucha Patil	F.Y. Biotech
19	Gaurangi Khota	F.Y. Biotech
20	Pushkar Nayak	F.Y. Biotech
21	Sadhana Yadav	F.Y. Biotech
22	Brishti Dasgupta	F.Y. Biotech
23	Krutika Champanekar	F.Y. Biotech
24	Vijay Kushwaha	F.Y. Biotech
25	Ajay Kushwaha	F.Y. Biotech
26	Sapna Singh	F.Y. Biotech
27	Anchita Chauhan	F.Y. Biotech
28	Vanshita D. Mistry	F.Y. Biotech
29	Priya V. Dhodi	F.Y. Biotech
30	Komal V. Sharma	F.Y. Biotech
31	Priyanshu R. Chaturvedi	F.Y. Biotech
32	Sneha G. Pradhan	F.Y. Biotech
33	Shivani L. Tripathi	F.Y. Biotech
34	Siddharth K. Pradhan	F.Y. Biotech
35	Dhwani S. Dhodi	F.Y. Biotech
36	Pavan R. Prasad	F.Y. Biotech

37	Aspiya A. Khan	F.Y. Biotech
38	Karan B. Singh	F.Y. Biotech
39	Sweety S. Gupta	F.Y. Biotech
40	Kaustubh B. Sogale	F.Y. Biotech
41	Sejal G. Thite	F.Y. Biotech
42	Smit R. kamble	F.Y. Biotech
43	Suneeta R. Rao	F.Y. Biotech
44	Dhairiya V. Jain	F.Y. Biotech
45	Rishav raj A. Mandal	F.Y. Biotech
46	Mansi R. Chauhan	F.Y. Biotech
47	Suraj a. Chauhan	F.Y. Biotech
48	Ishita	F.Y. Biotech
49	Shrushti	F.Y. Biotech
50	Sumit Shukla	F.Y. Biotech
51	Khushi	F.Y. Biotech
52	Kanchan Danavne	F.Y. Biotech
53	Neha Dhawle	F.Y. Biotech
54	Mahima	F.Y. Biotech

Practical Exam

CERTIFICATE COURSE IN FUNCTIONAL FOODS AND NUTRACEUTICALS

A.Y. 2022-23
PRACTICALS

Q.1. MAJOR	20 M
Estimation of total sugars from food products (dairy, fruit juices, bakery)	
OR	
Estimation of antioxidant property of phytochemicals by DPPH.	
Q.2 MINOR I:	10 M
Determination of acid value of natural fats and oils.	
OR	
Determination of iodine number of fats and oils.	
Q.3 MINOR II:	10 M
Detection of food adulterants from the given food sample_____.	
OR	
Detection of food adulterants from the given food sample_____.	
Q.4 Viva	5 M
Q.5 Journal	5 M

Question Paper

CERTIFICATE COURSE IN FUNCTIONAL FOODS AND NUTRACEUTICALS A.Y. 2022-23

Time: 60 mins

Max. Marks:25

Note: All questions are compulsory.

Q.1) Choose the correct alternatives:

10 M

1. Grapes are considered functional foods because they contain these substances:
A. Proteins
B. Carbohydrates
C. Phytochemicals
D. None of the above
2. FPO stands for:
A. Food Products Order
B. Fruit Products Order
C. Food and Fruit Products Order
D. None of the above
3. Which of the following is protein?
A. Glutathione
B. Melatonin
C. Carnitine
D. Collagen
4. Which of the following is Probiotic?
A. Bifid bacterium species
B. Lactobacillus species
C. Yogurt
D. All of the above
5. Which vitamin may interact with the anti-coagulant warfarin and increase the risk of excessive bleeding?
A. Vitamin A
B. Vitamin E
C. Vitamin B6
D. Vitamin B12
6. For the purpose of FSS Act 2006, _____ was finally recognized as an Administrative Ministry.
A. Ministry of Food processing industry
B. Ministry of Consumer Affairs
C. Ministry of Health and Family Welfare
D. None of the Above
7. Full form of FSSAI is
A. Food Standards and Safety Authority of India
B. Food Sample and Standards Authority of India
C. Food Safety and Standards Authority of India
D. None of these

8. The head office of the Food Safety and Standards Authority of India is located in

- A. Delhi
- B. Mumbai
- C. Kolkata
- D. Ahmadabad

9. The head office of the Food Safety and Standards Authority of India is located in

- A. Delhi
- B. Mumbai
- C. Kolkata
- D. Ahmadabad

10. According to FSSAI, the Food analyst should cause to be analyzed the samples and shall send four copies of the report to

- A. Food Safety officer
- B. Assistant Commissioner
- C. Designated officer
- D. Commissioner

Q.2. Write Short notes on (Any 3)

15M

1. FSSAI
2. Functional Foods used for Human Health
3. Sources of Nutraceuticals from animals and plants.
4. Classification of Functional Foods.

Sample Certificate





SONOPANT DANDEKAR SHIKSHAN MANDALI'S
Sonopant Dandekar Arts, V. S. Apte Commerce and
M. H. Mehta Science College, Palghar



SHRI DAHYABHAI AMRITLAL SHAH INSTITUTE OF BIOTECHNOLOGY

CERTIFICATE OF COMPLETION

This certificate is awarded to

Macchi Mitali

of Sonopant Dandekar College for successful completion of a Three months Certificate Course in "Functional Foods and Nutraceuticals" during the year 2022-2023 organized by Department of Biotechnology, Sonopant Dandekar College, Palghar.

Shilpa . P.

DR. SHILPA GHARAT

**Head of Department,
Department of Biotechnology
Convener**

MDeshmukh

ASST. PROF. MAHESH DESHMUKH

IQAC Co-ordinator

K. Save

DR. KIRAN SAVE

Principal

Report

The Certificate Course in Functional Foods and Nutraceuticals was designed to provide students with a comprehensive understanding of functional foods and nutraceuticals, their health implications, mechanisms, and applications in the industry. The course is divided into two batches in which 30 students were present in each group. The course included both theoretical and practical components, ensuring students gained hands-on experience alongside conceptual knowledge.

The course also aimed to educate students on the definitions and characteristics of functional foods and nutraceuticals, providing a comprehensive understanding of their potential health implications and mechanisms. Through this course, students will gain knowledge about the various applications of functional foods within the industry.

By the end of the course, students will be able to describe the concepts of functional foods and nutraceuticals, classify various functional foods, discuss their potential health implications and underlying mechanisms, and explain their applications in the industry. This holistic approach ensures that students are well-equipped with the necessary knowledge to understand and apply the principles of functional foods and nutraceuticals in real-world scenarios.

Batch I: 30

Batch II: 24

Total No. of Students: 54



Dr. Shilpa Gharat
Head,
Department of Biotechnology