

- Fernandes, S. D., Narayana, R. C., & Narayanan, A. V. (2019). The emergence of India as a blossoming market for nutraceutical supplements: An overview. *Trends in Food Science & Technology*, 86, 579-585. <https://doi.org/10.1016/j.tifs.2019.02.017> (Assessed on 15 December 2024).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi.

DISCIPLINESPECIFIC ELECTIVE COURSE–DSE-16-FT: SPICE AND HERB TECHNOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Spice and Herb Technology	4	3	1	0	Class XII	Nil

LEARNING OBJECTIVES:

- Introduce the role of spices and herbs in history, culture, and cuisine.
- Explore the processing, and applications of key spices and herbs.
- Discuss the role of spices and herbs in health, food preservation, and the economy.

LEARNING OUTCOMES:

After completion of the course, the students will be able to:

- Understand the historical and economic importance of herbs and spices.
- Learn about the characteristics of spices and herbs and their culinary uses.
- Gain knowledge about the processing techniques and industrial uses of spices and herbs.
- Understand the nutraceutical properties of spices and herbs.

SYLLABUS OF DSE –16- FT

THEORY (Credits 3: Hours 45)

UNIT I: Introduction to Spices and Herbs

(5 Hours)

Unit Description: This unit will introduce the students to various spices and herbs, exploring their historical significance, and economic value.

Subtopics:

- Definition and Classification: Understanding the difference between spices and herbs.
- Historical Significance: Spice routes, cultural exchange, and colonial trade.

- Economic Importance: Global spice market trends, exporting countries.

UNIT II: Common Spices and Herbs and their Culinary Uses

(16 Hours)

Unit Description: This unit will introduce the students to various spices and herbs, their characteristics and culinary uses.

Subtopics:

- Major spices of India: Pepper, cardamom, ginger, chilies, turmeric.
- Minor spices of India: carom seeds, coriander, cumin, fenugreek, garlic, mustard, mace, nutmeg, onion, saffron, tamarind, cloves, mint, vanilla, asafetida, allspice.
- Popular Herbs: Basil, chervil, chives, coriander, dill, lemon grass, mint, parsley, rosemary, sage, thyme, terragon.
- Regional spice blends.

UNIT III: Processing and Industrial use of Spices and Herbs

(16 Hours)

Unit Description: This unit focuses on the various techniques and standards involved in the post-harvest handling and processing of spices and herbs. This unit also introduces the industrial use of spices and herbs.

Subtopics:

- Post-Harvest Handling: Drying, cleaning, and storage techniques.
- Processing Techniques: Grinding, oil extraction, solvent extraction and packaging.
- Quality Standards: ISO standards, adulteration detection, and shelf life.
- Industrial Uses: Cosmetics, essential oils, and food preservation.

UNIT IV: Spices, Herbs, and Health

(8 Hours)

Unit Description: This unit explains the health-promoting and nutraceutical properties of spices and herbs.

Subtopics:

- Bioactive compounds in spices and herbs.
- Nutraceutical value.
- New product development like herbal tea blends/spice mixes.

TUTORIAL **(Credits 1; hours 15)**

1. Group discussion/Question Answer session/Problem solving exercises.
2. Presentation of project/Assignment by students.
3. Any other scholastic work related to application of conceptual understanding of the subject.
4. Evaluation and feedback by the teacher.

ESSENTIAL/ RECOMMENDED READINGS:

- Patil, D. A. (2013). *Spices and condiments: Origin, history and applications*. Daya Publishing House.
- Manay, S. (2001). *Foods: Facts and principles*. New Age International (P) Ltd., Publishers
- Srilakshmi, B. (2018). *Food science*. New Age International Publishers.

SUGGESTED READINGS:

- Achaya, K.T. (2003). *The story of our food*. Universities Press.
- Parry, J.W. (1953). *Spices: Their morphology, histology, and chemistry*. Chemical Publishing Co.
- Peter, K.V. (2012). *Handbook of herbs and spices*. Woodhead Publishing
- Ravindran, P.N. (2000). *Black pepper: Piper nigrum*. Harwood Academic Publishers.
- Pruthi, J.S. (1980). *Spices and condiments*. Academic Press Inc.
- Aggarwal, B.B., Sundaram, C., Malani, N., & Ichikawa, H. (2007). *The molecular targets and therapeutic uses of curcumin in health and disease*. Springer.

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