

DEPARTMENT OF BOTANY				CLASS: II B.Sc. Botany				
Sem	Course Type	Course Code	Course Title	Credits	Contact Hours/week	CIA	Ext	Total
III	Add-on I	20U3BAD1	Crop Varieties	2	2	50	50	100

**Course objectives:** The course will enable the students

1. To impart knowledge on the cultivation practices and characteristic qualities of crop varieties
2. To acquaint and keep abreast with the global trends in essential commodities.

#### **Unit I Cereals and millets (6 hours)**

Brief account on list of varieties, region and practices of cultivation, characteristic qualities and market value of Rice, Wheat, Corn Maize, millets.

#### **Unit II Pulses (6 hours)**

Brief account on list of varieties, region and practices of cultivation, characteristic qualities and market value of Bengal gram, pigeon pea, soybean, garden pea, black gram and green gram

#### **Unit III Nuts (6 hours)**

Brief account on list of varieties, region and practices of cultivation, characteristic qualities and market value of Groundnut, Almond, Cashew nut, Pista and Walnut.

#### **Unit IV Fruits (6 hours)**

Brief account on list of varieties, region and practices of cultivation, characteristic qualities and market value of Mango, Banana, grapes, Apple, Sapota and Guava

#### **Unit V Vegetables (6 hours)**

Brief account on list of varieties, region and practices of cultivation, characteristic qualities and market value of Potato, Brinjal, Tomato, Onion, Cabbage and Beans

#### **Books for Study**

1. Pandey B. P. (1978), Economic Botany, S. Chand Publishing Company., NewDelhi. Verma V. (1974). A Text book of Economic Botany, Emcay publication. New Delhi.
2. Hill.A.(1976).Economic botany Tata McGraw Hill Publishing Co;Ltd.New Delhi.
3. Bendre A. Kumar A Economic Botany, Rastogi Publication, New Delhi.

#### **Books for References**

1. Kochar .S.L.(2011). Economic Botany in Tropics McMillan Publications New Delhi.
2. Wickens, G.E. (2001). Economic Botany. Principles & Practices, Kluwer Academic Publishers The Netherlands.
3. Sambhamurthy.A.V.S.S&Subramanian .N.S: A textbook of Economic botany,Wiley Eastern ltd, New Delhi.

#### **Course Designers**

**Prof. S. ChellaPandian**, Associate Professor

**Prof. V. Meenakshi Sundaram**, Assistant Professor

DEPARTMENT OF BOTANY				CLASS: II B.Sc. Botany				
Sem	Course Type	Course Code	Course Title	Credits	Contact Hours/week	CIA	Ext	Total
IV	Add-on II	20U4BAD2	Industrial Botany	2	2	50	50	100

**Course objectives:** This course will enable the students

1. To familiarize the critical processing steps in the plant based industries.
2. To understand methods for large scale cultivation of organisms and production of its derived bio-products for human mankind.

#### **Unit I Phycolloid Industry (6 hours)**

Sources, physico-chemical properties, extraction methods, quality check industrial production and utilization of Agar-agar, Carrageenan and Alginic acid.

#### **Unit II Beverage Industry (6 hours)**

Varieties, chemical compositions, post harvest processing, Global market value of Tea and Coffee.

#### **Unit III Sugar industry (6 hours)**

Sugarcane varieties, production methods of cane sugar and beet sugar, refinement of jaggary, palm sugar.

#### **Unit IV Oil industry (6 hours)**

Brief account on Saturated and Unsaturated fats. Sources, lipid profile, extraction methods, processing and quality check of Sesame oil and Groundnut oil.

#### **Unit V Alcohol industry (6 hours)**

Brewing and fermenting Steps in beer production. Steps in wine production.

#### **Books for Study**

1. Pandey B. P. (1978), Economic Botany, S. Chand Publishing Company., NewDelhi. Verma V. (1974). A Text book of Economic Botany, Emcay publication. New Delhi.
2. Bendre A. Kumar A Economic Botany, Rastogi Publication, New Delhi.

#### **Books for References**

1. Sambhamurthy.A.V.S.S&Subramanian .N.S: A textbook of Economic botany,Wiley Eastern ltd, New Delhi.
2. Kochar .S.L.(2011). Economic Botany in Tropics McMillan Publications New Delhi.

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**Dr. P. Kannan**, Assistant Professor

**Prof. V. Meenakshi Sundaram**, Assistant Professor

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Sem	Course Type	Course Code	Course Title	Credits	Contact Hours/week	CIA	Ext	Total
III & IV	Self study	20U3BMSS	Secondary Metabolites	2	-	50	50	100

**Course Objectives:** This course will enable the learners

1. To study the various class of secondary metabolites and their specific significances.
2. To understand the pathways for the synthesis of secondary metabolites.

#### **Unit I Isoprenoids (6 hours)**

Sources, Role in plants and human utilization of rubber, steroids, essential oils, carotenoid pigments

#### **Unit II Nitrogen compounds (6 hours)**

Sources, Role in plants and human utilization alkaloids, glucosinalates, glycosides, nonprotein aminoacids.

#### **Unit III Phenolic acids (6 hours)**

Sources, Role in plants and human utilization lignin, tannins, coumarins, aflatoxins and flavonoids

#### **Unit IV Bacterial products (6 hours)**

Sources, Role in plants and human utilization of endotoxins and exotoxins

#### **Unit V Fungal products (6 hours)**

Sources, Role in plants and human utilization polyketides, nonribosomal peptides and terpenes.

#### **Books for Study**

1. Jain J.L 1999 Fundamentals of Biochemistry S. Chand & co Ltd. New Delhi.
2. Verma P.S. and Agarwal V.K. (2016) Cell Biology (Cytology, Biomolecules, Molecular Biology), Paperback, S. Chand and Company Ltd.
3. Rastogi, S.C. (2015) Cell Biology, 3<sup>rd</sup> Edition, New Age International (P) Limited Publishers, New Delhi.
4. Buchanan BB, Gruissen W & James RL 2000. Biochemistry and Molecular Biology of plants. I. K International pvt. Ltd. New Delhi.

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