



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	Nectar and Pollen Plants								
Course Code	AR222	Course Level			Short Cycle (Associate's Degree)				
ECTS Credit	4	Workload	100 (Hours)	Theory	3	Practice	1	Laboratory	0
Objectives of the Course	Important beekeeping plants in Turkey and their properties. to teach the importance of different plant species to provide in terms of the potential honey, nectar and pollen source by the sector .								
Course Content	In nature, plants are sources of nectar and pollen; Study of Cultivated plants, including trees and shrubs with plants that grow naturally in three groups . Factors affecting the efficiency of nectar and pollen, The production of honeydew honey, materials collected by honey bees from nature; Hemiptera insects feeding on the plant shell pack attached (scale insects), and aphids generated by the sugary secretions.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Demonstration, Discussion, Case Study, Individual Study								
Name of Lecturer(s)	Ins. Ayhan KARACA								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading	
1	Nectar and Pollen Plants (A.Karaca, Ö.Boz ve M. Kösoğlu)
2	Trees and Shrubs (Prof. Dr. Ersin Yücel),
3	A colour guide to pollen loads of the honey bee (William Kirk),
4	Herbs. (Bremness, L.),
5	Forage Crops (Prof Dr. H. Soya, Prof. Dr. R. Avcioğlu, Araş. Gr. H. Geren)
6	Flora of Turkey (Davis, P.H.),
7	Modern Beekeeping Techniques (Doğaroğlu, M.)

Week	Weekly Detailed Course Contents	
1	Theoretical	The importance of beekeeping in plant production ; the importance of honeybee for the cultivation of garden plants, The importance of honeybee for the cultivation of field crops, The role of honey bees in pollination.
2	Theoretical	Flower Structure of the angiosperm plants, Floral (seed) Plants also; fertilization, Mobile Beekeeping, Source Selection, Honey potential of Different Plant Species .
3	Theoretical	Nectar and pollen sources, What is Nectar? Nectar secretion bodies (nektarium) Nectar secretion organs of the structure, Glandular physiology.
4	Theoretical	Factors affecting the efficiency of nectar, Internal factors, External factors
5	Theoretical	Nectar and pollen sources, Meadows and pastures self-grown herbs, Plants grown in planting, Trees and shrubs, Source of honey, fresh fruits, , The plants are poisonous honey, Honeydew honey (honey pine = Insect Nectar)
6	Theoretical	What is pollen? Pollen characteristics, Factors affecting the efficiency of pollen.
7	Theoretical	Some Important Features of Plants and beekeeping in Turkey.
8	Preparation Work	Revision of the topics covered for the exam preparation.
	Intermediate Exam	Mid-term exam.
9	Theoretical	What is Herbarium? Required materials, Issues to be considered when the sample is taken, Make a herbarium. (Practice hours each week for herbarium plant collected in survey work done)
	Practice	Herbarium plant for practice hours each week will be collected in the survey work



10	Theoretical	Some of Cultivated Plants in Turkey and Properties of nectar and pollen source, Rapeseed (Brassica napus) Chestnut (Castanea sativa), Citrus (Citrus spp.) Pumpkin (Cucurbita spp.)
11	Theoretical	Sea Buckthorn (Elaeagnus angustifolia), Eucalyptus (Eucalyptus camaldulensis), Soybean (Glycine max), Cotton (Gossypium spp.) Sunflower (Helianthus annuus L.)
12	Theoretical	Apple (Malus spp.) Alfalfa (Medicago sativa), Mint (Mentha longifolia), Tobacco (Nicotiana tabacum), Sainfoin (Onobrychis sp.) Bee grass (Phacelia californica).
13	Theoretical	Forest Rose (Rhododendron ponticum), Strawberry (Fragaria vesca), Anise (Pimpinella spp.) Stone fruits (Prunus spp.) Black locust (Robinia pseudoacacia).
14	Theoretical	Sage (Salvia glutinosa), Thyme (Thymus praecox), Lime (Tilia argentea).
15	Theoretical	Red Clover (Trifolium pratense), White Clover (Trifolium repens), Species of vetch (Vicia spp.)
16	Theoretical	Final exam.
	Preparation Work	Review all subjects for the exam preparation .

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Lecture - Practice	14	0	1	14
Land Work	14	1	1	28
Midterm Examination	1	7	1	8
Final Examination	1	7	1	8
Total Workload (Hours)				100
[Total Workload (Hours) / 25*] = ECTS				4

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to acquire the importance of beekeeping in production; Structure of angiosperm plants, flowers, Nectar and pollen sources, What is Nectar?
2	To be able to comprehend nectar secretion, tissue (nektarium) Factors affecting the efficiency of nectar,
3	To be able to comprehend nectar and pollen sources. What is pollen? Pollen characteristics, Source of honey, nectar and pollen plants in Turkey,
4	To be able to comprehend herbarium .To be able to prepare a herbarium.

Programme Outcomes (Apiculture)

1	Understand to bee family (ecology, behavior), needs and diseases of bees. To make needs for healthy colony.
2	Produce of bee and bee products with modern techniques
3	Understand and use of tools and equipments used in Apiculture
4	Understand to nectar and pollen vegetables
5	To know nomadic apiculture conditions
6	Packing of bee products
7	Application to hygienic rules in apiculture enterprise
8	To have information of professional ethics and responsibility
9	Ability to work in team and individual
10	To communicate orally and in writing

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4
P1	5		5	4
P2		5	4	4
P4	5	5	5	4
P5	4	4	4	
P9	4	4	4	4
P10				3

