CYTOGENETICS IN HORTICULTURE

1	Course Title:	CYTOGENETICS IN HORTICULTURE	
2	Course Code:	BAH3117PDS	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	3	
6	Semester:	5	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	1.00	
9	Practice (hour/week):	2.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	Non	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. MERYEM İPEK	
15	Course Lecturers:	Prof. Dr. Cevriye Mert	
16	Contact information of the Course Coordinator:	msipek@uludag. edu. tr +90 2242941485 Bursa Uludağ Üniversitesi Ziraat Fakültesi Bahçe Bitkileri Bölümü Görükle, Nilüfer, BURSA	
17	Website:		
18	Objective of the Course:	To provide basic information how characters are organized in plants at the level of cell genetics, passed to the next generation, what has done and can be done using inheritance in plant breeding. Together with information about the courses in biochemistry and genetics, the normal Mendelian inheritance is taught in the field of horticulture. It is aimed that students learn abnormalities and non Mendelian inheritance used in the current researches and gain breeding information.	
19	Contribution of the Course to Professional Development:	Students learn how cytogenetic is important in plant breeding and apply the knowledge learned in this course in their professional life.	
20	Learning Outcomes:		
		1	Be able to use sources of genetic information
		2	Be able to information about reproduction
		3	Be able to use Mendelian inheritance
		4	Be able to use mutations
		5	Be able to use inheritance facts of agronomical characters
		6	Be able to use Mendelian inheritance information of agronomical characters
		7	Be able to use chromosome manipulation knowledge
		8	Be able to understand maternal inheritance effects
		9	Be able to understand paternal inheritance effects
		10	Be able to understand parental inheritance effects
21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	History of cytogenetics and progress	Search for cytogenetic related articles

2	Mitotic division and inheritance in cell	Group discussion and drove mitotic division
3	Meiotic division and inheritance in cell	Group discussion and drove meiotic division
4	Structural different portions of chromosomes	Define euchromatin and heterochromatin
5	Deletions in chromosomes	Practice of mitotic and meiotic division with deleted chromosome
6	Insertion in chromosomes	Practice of mitotic and meiotic division with inserted chromosome
7	Inversion in chromosomes	Practice of mitotic and meiotic division with inverted chromosome
8	Translocation in chromosomes	Practice of mitotic and meiotic division with translocated chromosome
9	Chromosome staining	Group discussion about usages
10	Artificial chromosomes	Group discussion about usages
11	Use of artificial chromosomes	Group discussion about usages
12	Chromosome variations in plants	Group discussion about usages
13	Cytoplasmic inheritance in plants	Group discussion about usages
14	Cytoplasmic characters in plants and their usage	Group discussion about usages

22	Textbooks, References and/or Other Materials:	Cytogenetics (Plants, Animals, Humans) Schulz-Schaeffer, J. 1980
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Theoretical	1	20.00
Practicals/Labs	3	100.00
Total		
Success Grade		
Contribution of Final Exam to Success Grade		60.00
Total		100.00

Activites	Number	Duration (hour)	Total Work Load (hour)
Home work-project	14	1.00	14.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	1.00	14.00
Homeworks	1	6.00	6.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	30.00	30.00
Others	0	0.00	0.00
Course Final Exams	1	30.00	30.00
Total Work Load			122.00
Total work load/ 30 hr			4.07
ECTS Credit of the Course			4.00

24 ECTS / WORK LOAD TABLE

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ÖK5	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK7	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK8	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK9	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK10	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**