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:	3.00	
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:	Doç.Dr.Ahmet İpek	
16	Contact information of the Course Coordinator:	msipek@uludag.edu.tr, 294 1485 Uludag University Agricultural Faculty Horticulture Department 16059 Gorukle 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:		
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**
Midterm Exam	1	20.00
Quiz	0	0.00
Total	3	100.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00

24 ECTS / WORK LOAD TABLE

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	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	10.00	10.00
Others	6	1.00	6.00
Final Exams	1	12.00	12.00
Total Work Load			90.00
Total work load/ 30 hr			3.00
ECTS Credit of the Course			3.00

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	5	0	3	3	3	1	2	0	0	1	0	0	0	0	0	0
ÖK2	5	3	3	4	3	1	2	0	0	1	0	0	0	0	0	0
ÖK3	5	3	3	4	2	1	2	1	1	1	0	0	0	0	0	0
ÖK4	5	3	3	4	3	1	2	0	0	0	0	0	0	0	0	0

ÖK5	5	4	3	3	2	1	1	0	1	1	0	0	0	0	0	0
ÖK6	5	3	3	3	1	0	0	0	0	0	0	0	0	0	0	0
ÖK7	5	3	3	3	2	1	1	0	1	1	0	0	0	0	0	0
ÖK8	5	3	3	3	2	1	1	0	0	1	0	0	0	0	0	0
ÖK9	5	3	3	3	2	1	1	0	0	1	0	0	0	0	0	0
ÖK10	5	3	3	3	2	1	1	0	0	1	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**