REPRODUCTIVE BIOLOGY OF SEED PLANTS

1	Course Title:	REPRODUCTIVE BIOLOGY OF SEED PLANTS	
2	Course Code:	BIO5119	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. Aycan Tosunoğlu	
15	Course Lecturers:	-	
16	Contact information of the Course Coordinator:	aycanbilisik@uludag.edu.tr 02242941854 Uludağ Üniversitesi Fen Edebiyat Fakültesi Biyoloji Bölümü, Nilüfer, BURSA	
17	Website:		
18	Objective of the Course:	To have detailed information about reproductive structures, reproductive organs, pollination, fertilization, reproductive barriers, endosperm, polyembryonia, apomixis and seed in seed plants.	
19	Contribution of the Course to Professional Development:	Knowing the reproductive structure and functions of seed plants will contribute to the professional life and career planning of the graduate students of Botany.	
20	Learning Outcomes:		
		1	To understand the plant reproductive organs and their detailed structures
		2	To understand the formation of female and male reproductive organs and cells in plants
		3	To be able to comprehend fertilization and / or reproductive barriers in plants
		4	To understand endosperm formation, development and importance in plants
		5	To be able to understand seed structure and development in plants
		6	
		7	
		8	
		9	
		10	
21	Course Content:		

Course Content:

Week	Theoretical	Practice

1	Introduction: Seed Plants, Their Taxonomical place, Evolutionary Importance, Overview of reproductive organs.	
2	Male gametophyte: Structure of anther, microsporogenesis. Role of tapetum, pollen development, pollen tube growth and guidance	
3	Pollen viability and germination, pollen storage, male sterility, sperm dimorphism	
4	Female gametophyte: Ovule development, megasporogenesis.	
5	Embryosac types: Ultrastructure of components, synergid and antipodal haustoria, nutrition of embryosac.	
6	Pollination: Ultrastructural and histochemical details of style and stigma, self and interspecific incompatibility	
7	Significance of pollen-pistil interaction, role of pollen- pistil interaction, role of pollen wall proteins and stigma surface proteins, barriers to fertilization, methods of overcoming incompatibilities.	
8	Fertilization: Heterospermy, differential behaviour of male gametes, discharge and movement of sperms.	
	... development.Embryo: Development of embryo in monocots and dicots ...	
	... pollen embryos.	
	... significance.	
13	Seed: Structure and development, seed ...	
14	In vitro fertilization. Anther, pollen and ...	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	3	10.00	30.00
Homeworks	4	15.00	60.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	48.00	48.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

22	Textbooks, References and/or Other ...	Beck, C.B. 2012. Bitki Yapısı ve Gelişimine Giriş, Çev. H. ... ... Angiosperms", Springer-Verlag, Berlin, Heidelberg, New ... ... Publisher. Ünal, M. "Bitki (Angiosperm) Embriyolojisi", Nobel Yayınevi. Ankara, 2006
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	1	40.00
Final Exam	1	60.00
Total	2	100.00

Contribution of Term (Year) Learning Activities to Success Grade	40.00
Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	The system of relative evaluation is applied.

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	0	0	0	0	3	2	0	3	0	0	0	0	0	0	0
ÖK2	4	0	0	0	0	2	2	0	3	0	0	0	0	0	0	0
ÖK3	3	0	0	0	0	3	2	0	3	0	0	0	0	0	0	0
ÖK4	4	0	0	0	0	4	2	0	3	0	0	0	0	0	0	0
ÖK5	3	0	0	0	0	3	2	0	3	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**