



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		DsRNA Genetic Elements							
Course Code		ZBK623		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	7	Workload	175 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Current knowledge of dsRNA genetic factors from different biological systems are unified on this course.							
Course Content		The course has cover that the nature, origin and biological roles of double-stranded RNA that are capable of replication in fungi, plants and animals. It has convey that dsRNA biology could allow us to create solutions for problems ranging from plant disease management. dsRNA are powerful means of modulating gene expression. Presence of small amounts of dsRNA elicits sequence-specific gene silencing, which may lead to the development of treatments aimed at silencing harmful genes causing serious diseases in animals and humans.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Tavantzis S.M. 2002. dsRNA Genetic Elements. CRC Pres, 304 pp
2	Buck, K.W.1986. Fungal Virology- an overview. CRC Pres. Boca Raton, FL:pp. 1-84
3	Ghabrial, S.A. 1998. Origin, adaptation and evolutionary pathways of fungal viruses. Virus Genes 16,119-131.
4	Ghabrial, S.A. and Hillman, B.I. 1999. dsRNA viruses New York: Elsevier
5	Ghabrial, S.A., 1980 Effects of fungal viruses on their hosts. Annual Rew. Of Phthophology

Week	Weekly Detailed Course Contents	
1	Theoretical	dsRNA genetic factors from different biological systems
2	Theoretical	dsRNA systems from yeast, fungi, plants and animals
3	Theoretical	dsRNA biology, RNA interference
4	Theoretical	The RNAi revolution, RNAi based methods, RNAi and cosuppression: dsRNA as an agent of sequence specific genetic silencing in animals and plants
5	Theoretical	The dsRNA activated protein kinase PKR, RNA silencing
6	Theoretical	Significance of dsRNA genetic elements in plant pathogenic fungi
7	Theoretical	Molecular biology
8	Intermediate Exam	Exam
9	Theoretical	Effect of dsRNA mycoviruses on host phenotypes
10	Theoretical	dsRNA associated with Hypovirulent strains of Cryphonectria parasitica
11	Theoretical	Transmitted diseased state in Ophiostoma ulmi
12	Theoretical	dsRNA viruses of Gaeumannomyces graminis var. tiritici
13	Theoretical	The viruses of Helminthosporium victoriae
14	Theoretical	Enhanced virulence associated with dsRNA
15	Final Exam	Final

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	2	56
Lecture - Practice	14	2	2	56
Midterm Examination	1	30	1	31



Final Examination	1	31	1	32
Total Workload (Hours)				175
[Total Workload (Hours) / 25*] = ECTS				7
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Understanding of dsRNA genetic elements...
2	The use of dsRNA genetic elements in the prevention of plant diseases
3	
4	
5	

Programme Outcomes (Plant Protection Doctorate)

1	Students improve their knowledge and skill previously gained during first cycle and second cycle programs and become a specialist their own discipline
2	Students gain knowledge and experience for using new techniques and equipments in their own discipline.
3	Students gain ability to plan and conduct scientific projects in their own discipline by using current knowledge and techniques, and to collect and analyze data and make inference on the results .
4	Students gain ability to write scientific articles and prepare them for publications and to make oral or poster presentations in scientific meetings.
5	Students gain ability to review scientific articles and projects relevant to their own discipline.
6	Students gain experiences how to get effective position in national and international projects.
7	Students gain experience for participating in and organizing scientific meetings.

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

	L1	L2	L3	L4	L5
P1	3	3	3	3	3
P2	4	4	4	4	4
P3	5	5	5	5	5
P4	4	4	4	4	4
P5	5	5	5	5	5
P6	4	4	4	4	4
P7	4	4	4	4	4

