PARTIAL DIFFERENTIAL EQUATIONS AND ENG. APPLICATIONS

1	Course Title:	PARTIAL DIFFERENTIAL EQUATIONS AND ENG. APPLICATIONS
2	Course Code:	MAK5247
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. YAŞAR PALA
15	Course Lecturers:	Prof.Dr. Yaşar PALA
16	Contact information of the Course Coordinator:	Prof.Dr. Yaşar PALA mypala@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The objective of the lecture is to teach the analytical or computational methods of partial differential equations and to make it possible for students to gain the ability of setting up the physical modelling of the engineering problems.
19	Contribution of the Course to Professional Development:	The objective of the lecture is to teach the analytical or computational methods of partial differential equations and to make it possible for students to gain the ability of setting up the physical modelling of the engineering problems.
20	Learning Outcomes:	
	1	Presenting application areas and the general solution methods of partial differential equations as a common subject.
	2	Giving the success of the using the knowledge of Mathematics, basic sciences and engineering.
	3	Giving the success of defining, modelling and solving of the problems in mechanical engineering and other areas.
	4	İnouculating a global point of view to the science with the engineering first.
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Basic principles. First order partial differential equations. Applications.	

2	Classifications of equations and boundary conditions .	
3	Ortonormal Functions.	
4	Applications of Fourier method.	
5	Problems including cylindrical and spherical geometry.	
6	problems	
7	Continuous eigenvalues and Fourier integrals .	
8	Laplace transforms	
9	Repeating courses	
10	Transform methods for boundary value problems.	
11	Green functions and generalised functions.	
12	Numerical Methods	
13	Numerical Methods	
14	General evaluation	

22	Textbooks, References and/or Other Materials:	1-Prof.Dr. Yaşar PALA , Modern Uygulamalı Diferensiyel Denklemler (Turkish), Nobel Yayıncılık, 2006. 2-Prof.Dr. Yaşar PALA , Fizikçiler ve Mühendisler için Kısmi Diferensiyel Denklemler (Turkish), U.Ü.Yayınları, 1996.

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	14	3.00	42.00
Homeworks	1	25.00	25.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	25.00	25.00
Others	0	0.00	0.00
Final Exams	1	45.00	45.00
Total Work Load			204.00
Total work load/ 30 hr			6.77
ECTS Credit of the Course			6.00

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	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK4	4	0	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