

	Course name: MATH325 Special Functions		Department: Mathematics				Semester 5
	Methods of Education						Credit (ECTS)
	Lecture	Recitation/ (Etud)	Lab	Exams	Homework/ Quiz	Other	Total
42	0	0	40	0	98	180	
Language	English						
Compulsory/Elective	Compulsory						
Prerequisites	None						
Course Contents	Introduction to the theory of special functions, hypergeometric functions, orthogonal polynomials, Bessel functions.						
Weekly Detailed Course Contents	Weeks	Subjects					
	1	Introduction to the theory of special functions					
	2	Introduction to the theory of special functions					
	3	Introduction to the theory of special functions					
	4	Hypergeometric functions					
	5	Hypergeometric functions					
	6	Hypergeometric functions					
	7	Orthogonal polynomials					
	8	Orthogonal polynomials					
	9	Orthogonal polynomials					
	10	Orthogonal polynomials					
	11	Bessel functions					
	12	Bessel functions					
	13	Bessel functions					
14	Bessel functions						
Course Objectives	<p>The purpose of this course is to</p> <ul style="list-style-type: none"> teach the fundamental concepts for some important special functions. connect the theory of analytical functions of one complex variable with the theory of special functions. analyze the properties of the special functions. 						
Learning Outcomes and Competences	<p>Upon completion of this course students</p> <ul style="list-style-type: none"> know the fundamental concepts of some important special functions encountered in both pure and applied mathematics. is able to connect the theory of analytical functions of one complex variable with the theory of special functions. can use the integral representations of the special functions to analyze their properties. 						
Textbook and /or References	<p>Main textbooks :</p> <ul style="list-style-type: none"> Bateman, Higher Transcendental functions, vol.I. , vol.II, vol.III P. Nevai, Orthogonal Polynomials: Theory and Practice, vol. XXIII C. Viola, An introduction to special functions, Springer. 						

	<ul style="list-style-type: none"> G. E. Andrews, R. Askey, R. Roy. <i>Special functions</i>. Cambridge University Press. 		
Assessment Criteria		If any, mark as (X)	Percentage (%)
	Midterm Exams	X	40
	Quizzes		
	Homeworks		
	Projects		
	Term Paper		
	Laboratory work		
	Other		
	Final Exam	X	60
Instructors	???		