Denumirea disciplinei	DIFFERENTIAL EQUATIONS
Domeniul de studiu	Electronic Engeneering And Telecommunications
Specializarea	
Codul disciplinei	51381007
Titularul disciplinei	Prof.dr. Dorian POPA
Colaboratori	
Catedra	Matematică
Facultatea	Electronică şi Telecomunicaţii

Sem.	Tipul disciplinei Fundamentală, Ing. din dom., Spec., Opţională, Facultativă	Curs	Aplicaţii			Curs	Aplicaţii			Stud. Ind.	TO TA L	C r e d	Forma de verificare
		[ore/săpt.]				[ore/sem.]							
			S	L	P		S	L	P				
2	**Fundamentala**	**2**	**2**	**-**	**-**	**28**	**28**			**84**	**140**	**5**	**Examen**

Competenţe dobândite:
Cunoştinţe teoretice
Notions and results concerning differential equations and equations with partial derivatives of order one and two. Cauchy problem for different type of equations Bessel equation and Bessel functions. Dynamic systems.
Abilităţi dobândite: (Ce ştie să facă)
■ To solve a differential equation and a system of differential equations. ■ To operate with Bessel functions ■ To use differential equations in some applications
Cerinţe prealabile
Notions of Mathematical Analysis and Linear Algebra
A. Conţinutul cursului (titlul cursurilor)
1. Examples which leads to differential equations 2. Basic notions. Problems concerning differential equations 3. Differential equations of order one 4. Existence and uniqueness theorem for the Cauchy problem 5. Linear equations of order n. 6. Linear and homogeneous with constant coefficients 7. Linear and monhogeneous equations with constant coefficients. 8. Series solutions for differential equations 9. Bessel equation and Bessel functions 10. Linear systems of differential equations 11. Laplace transform 12. Equations with partial derivatives of order one. 13. Cauchy problem for equations with partial derivatives of order one 14. Linear equations with partial derivatives of order two.
B1. Conţinutul aplicaţiilor (lucrări de laborator, seminar, conţinutul proiectului de an)
1. Differential equations of order one 2. Problems concerning differential equations of order one 3. Differential equations reducible to order one 4. Cauchy problem. Differential inequalities 5. Linear and nonhomogeneous equations of order n

6. Differential equations integrated by series
7. Applications of Bessel functions
8. Systems of differential equations
9. Applications of Laplace transform
10. Linear equation with partial derivatives of order one
11. Cvasilinear equations with partial derivatives of order one
12. Cvasilinear equations with partial derivatives of order one
13. Equations with partial derivatives of order two
14. Applications of partial differential equations of order two.

B2. Loc de desfăşurare: Baritiu 26-28

C. Studiul individual (tematica studiilor bibliografice, materiale de sinteză, proiecte, aplicaţii etc.)

14 sets of problems
Applications of differential equations

Structura studiului individual	Studiu materiale curs	Studiu materiale tutoriale	Rezolvări teme	Pregătire aplicaţii	Timp alocat examinărilor	Total ore pregătire individuală
Nr. ore	28	4	45	3	4	84

Bibliografie

V. Barbu, Ecuatii diferentiale, Editura Junimea, 1985

Modul de examinare şi atribuire a notei

Modul de examinare	Written paper
Componentele notei	Written paper (T) Seminar (S)
Formula de calcul a notei	N=0,7T+0,3S