

B.Tech. Electronics and Communications Engineering (ECE)
KURUKSHETRA UNIVERSITY, KURUKSHETRA
Modified scheme of exams w.e.f. session 2025-26
SEMESTER-III

S. No.	Course No./ Code	Subject	L:T:P	Hours/ Week	Credits	Examination Schedule (Marks)				Duration of exam (Hours)
						End Semester Exam	Internal assessment	Practical Exam	Total	
1	B23-ESC 221	Integral Transforms & Numerical Techniques	3:1:0	4	4	70	30	--	100	3
2	B23-ECE 201	Electronic Devices	3:0:0	3	3	70	30	--	100	3
3	B23-ECE 203	Digital Electronics	3:0:0	3	3	70	30	--	100	3
4	B23-ECE 205	Signals and Systems	3:0:0	3	3	70	30	--	100	3
5	B23-ECE 207	Network Theory	3:0:0	3	3	70	30	--	100	3
6	B23-ECE 209	Analog Communication	2:1:0	3	3	70	30	--	100	3
7	B23-ECE 211	Electronic Devices Lab	0:0:3	3	1.5	--	40	60	100	3
8	B23-ECE 213	Digital Electronics Lab	0:0:3	3	1.5	--	40	60	100	3
9	B23-ECE 215	Signals and Systems Lab	0:0:2	2	1	--	40	60	100	3
10	B23- MAC-201	Environmental Studies	3:0:0	3	1	70	30	--	100	3
TOTAL				30	24	490	330	180	1000	

NCC/NSS/Sports/Yoga/Technical or cultural club/society activities may also be joined by students in second year and will be evaluated in 7th semester by the institute based upon continuous evaluation model as per guidelines.

B23-ESC-221	INTEGRAL TRANSFORMS & NUMERICAL TECHNIQUES						
L	T	P	Credit	End Semester Exam	Internal Assessment	Total	Time
3	1	-	4	70	30	100	3 h
Purpose	To familiarize the prospective students with Laplace Transform to solve the differential equations and uses of numerical techniques to find out the approximate solutions.						
Course Outcomes							
CO1	Introduction about the concept of Laplace transform and how it is useful in solving the definite integrals and initial value problems.						
CO 2	To introduce the tools of numerical methods for the solutions of system of linear equations.						
CO 3	How polynomial and transcendental equations can be solved for approximated solution whose exact solution otherwise cannot be evaluated.						
CO4	To familiar with essential tool of Numerical Integration needed to approximate solutions for the ordinary differential equations.						
UNIT-I (12 Hrs) Laplace Transform: Introduction, Laplace Transform of Elementary Functions, Basic properties of Laplace Transform, Laplace transform of periodic functions, finding inverse Laplace transform by different methods, Convolution theorem, solving ordinary differential equations by Laplace Transform method.							
UNIT-II (07 Hrs) Solution of system of Linear equations using Gauss Elimination and Gauss Seidel methods, row echelon form, LU factorization, Cholesky method.							
UNIT-III (11 hrs) Solution of polynomial and transcendental equations: Newton-Raphson method and Regula Falsi method, Interpolation using Newton's forward and backward difference formulae. Interpolation with unequal intervals: Newton's divided difference and Lagrange's formulae.							
UNIT-IV (10 hrs) Numerical integration: Trapezoidal rule and Simpson's 1/3rd and 3/8 rules, Ordinary differential equations: Euler and modified Euler's methods. Runge-Kutta method of fourth order for solving first and second order equations, predictor-corrector method.							
Suggested Books: 1. S. D. Conte and Carl de Boor, Elementary Numerical Analysis- An Algorithmic Approach (3rd Edition), McGraw-Hill, 1980. 2. C. E. Froberg, Introduction to Numerical Analysis (2nd Edition), Addison-Wesley, 1981. 3. E. Kreyszig, Advanced engineering mathematics (8th Edition), John Wiley (1999). 4. Reena Garg, Advanced Engineering Mathematics, Khanna Book Publishing (2022). 5. K. E. Atkinson, An Introduction to Numerical Analysis (2nd edition), Wiley-India, 1989 6. R. Agor, Elements of Mathematical Analysis, Khanna Publishing House, 2015. 7. Ramana B.V., Higher Engineering Mathematics, Tata McGraw Hill New Delhi, 11 th Reprint, 2010. 8. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 36th Edition, 2010. 9. Veerarajan T., Engineering Mathematics (for semester III), Tata McGraw-Hill, New Delhi, 2010.							
Note: The paper setter will set the paper as per the question paper templates provided.							