

Enclosure - I

**DSE Allied courses in Mathematics offered to B.Sc. – Electronics
by Mathematics Department
for the students admitted from 2017-2018 & onwards.**

Semester – I			
17UELDA01	DSE Allied : Mathematics for Electronics	3hrs/week	3 Credits

Objectives:-

After learning this course, the students should be able to:

1. Evaluate Area under the given curve.
2. Evaluate the volume of solids such as pyramid, Sphere
3. Calculate Laplace and Inverse Laplace Transform of a function.
4. Learn Application of Laplace Transform in Electronics.
5. Calculate Fourier series of for a function defined on a closed interval.
6. Determine whether a given function is even, odd or neither.

Unit 1	Differentiation	04 Hrs
	<ul style="list-style-type: none"> • Differentiation • Chain Rule • Implicit rule • Differentiation of a inverse function 	
Unit 2	Application of Differentiation	08 Hrs
	<ul style="list-style-type: none"> • Linear Approximation • Maxima and Minima • LMVT 	
Unit 3	Integration	06 Hrs
	<ul style="list-style-type: none"> • Definite Integration • First Fundamental Theorem • Area and Volume using integration 	
Unit 4	Laplace Transform	10 Hrs
	<ul style="list-style-type: none"> • Inverse Laplace Transform • First Shifting Theorem • Transforms of derivatives and integrals 	

Unit 5 Fourier series

08 Hrs

- Fourier series
- Fourier series of Functions of any period
- Fourier series of Even and odd functions
- Half range Expansion

Text Books

1. Maurice D. Weir, Joel Hass, Frank R. Giordano, Thomas' Calculus, Pearson Education.
2. E. Kreyszig, Advanced Engineering Mathematics (8th Edition), Wiley India (2007).

Reference Books

1. R. V. Churchill and J. W. Brown, Fourier series and boundary value problems (7th Edition), McGraw – Hill (2006).

Semester – I			
17UELDA02	DSE-Allied Practical-1: Mathematics for Electronics Practical	2hrs/wk	1 Credits

Objectives:-

Upon completion of the course students will be able to`

1. Evaluate Area under the given curve.
2. Calculate Laplace and Inverse Laplace Transform of a function.
3. Calculate Fourier series of for a function defined on a closed interval.
4. Understand Differentiation, Chain rule and implicit Rule.

List of Practical

1. Practice of Differentiation, Chain rule and implicit Rule.
2. Practice of Differentiation of inverse function.
3. Practice of Linear Approximation and Maxima/minima.
4. Practice of LMVT
5. Practice of Definite Integration and First Fundamental Theorem.
6. Practice of Area and Volume using integration.
7. Practice of Laplace Transform, Inverse Laplace Transform.
8. Practice of Transforms of Derivatives and Integrals.
9. Practice of Fourier series.
10. Practice of half range expansion.

Text Books

1. Maurice D. Weir, Joel Hass, Frank R. Giordano, Thomas' Calculus, Pearson Education.
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Reference Books

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