<table>
<tr><td>No</td><td colspan="2">Course Information</td></tr>
<tr><td>1</td><td>Unit name:</td><td>Engineering Circuit Analysis III</td></tr>
<tr><td>2</td><td>Code:</td><td>EP 31011</td></tr>
<tr><td>3</td><td>Classification:</td><td>Engineering subject</td></tr>
<tr><td>4</td><td>Credit value:</td><td>2.5</td></tr>
<tr><td>5</td><td>Semester/ Year Offered:</td><td>1/3</td></tr>
<tr><td>6</td><td>Pre-requisite:</td><td>Engineering Circuit Analysis I & II</td></tr>
<tr><td>7</td><td>Mode of delivery:</td><td>Lecture, Practical</td></tr>
<tr><td rowspan="3">8</td><td>Assessment system and breakdown of marks:</td><td></td></tr>
<tr><td>Test</td><td>20%</td></tr>
<tr><td>Mid-term Examination</td><td>30%</td></tr>
<tr><td>9</td><td>Academic staff teaching unit:</td><td>3</td></tr>
<tr><td>10</td><td colspan="2">Course outcome of unit:
In this course students will be able
to recall the fundamental laws of electrical circuit
to compute the steady-state solution and transient analysis of electrical circuit
to differentiate the complex frequency, differential equation and complete response of electrical circuit
to apply the differential equation of Laplace transform
to build the electrical circuit by using software and tools</td></tr>
<tr><td>11</td><td colspan="2">Synopsis of unit:
The course covers the source free RL and RC circuit, application of forcing function with use circuit theorem, source free RLC circuit in dc steady state conditions, complex frequency circuit, Laplace transform can be used to solve differential equation.</td></tr>
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	Topic: **Chapter Title**
	8 BASIC RL AND RC CIRCUITS - The Source-Free RL Circuit -Properties of the Exponential Response -The Source-Free RC Circuit -A More General Perspective -The Unit-Step Function -Driven RL Circuits -Natural and Forced Response -Driven RC Circuit -Predicting the Response of Sequentially Switched Circuits **9 THE RLC CIRCUIT** -The Source-Free Parallel Circuit -The Over-damped Parallel RLC Circuit - Critical Damping -The Under-damped Parallel RLC Circuit -The Source-Free Series RLC Circuit -The Complete Response of the RLC Circuit **14 COMPLEX FREQUENCY AND THE LAPLACE TRANSFORM** -Complex Frequency -The Damped Sinusoidal Forcing Function - Definition of the Laplace Transform -Laplace Transforms of Simple Time Functions -Inverse Transform Techniques -Basic Theorems for the Laplace Transform -The Initial-Value and Final-Value Theorem
14	Main references: Engineering Circuit Analysis, eight edition by William H. Hayt,Jr. Jack E. Kemmerly. Steven M. Durbin
15	Additional references: Fundamentals of Electric Circuits, 4th Edition, Charles K.Alexander and Matthew N.O.Sadiku