

**Course No:** ETSS314

**Course Title:** Signal & Systems

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**Term (Semester):** 4<sup>TH</sup> Semester

### **Objectives:**

The course is aimed to build a comprehensive foundation for later higher-level courses in communication systems, control systems. Both discrete-time and continuous-time signals, systems and transforms are covered in this course.

### **Course Contents:**

1. Introduction
2. Continuous and Discrete time signals
3. Classification of signals
4. Classification of system
5. Convolution
6. Discrete-time Fourier transform
7. Continuous-time Fourier transform
8. Sampling Theorem
9. Z-transform

### **Reference Books:**

1. Signals and Systems, Oppenheim A.V., Willsky A.S. and Nawab S. H., Prentice Hall. (Latest Edition).
2. Signals, Systems and Transforms, Phillips C.L. and Parr J.M., Prentice Hall, (Latest Edition).

<b>Week #</b>	<b>Topic</b>
<b>Week # 1</b> (06 <sup>th</sup> March 18)	<b>Introduction</b> <b>Continuous &amp; Discrete Time Signals</b> <b>Classification of Signals-I</b>
<b>Week # 2</b> (13 <sup>th</sup> March 18)	<b>Classification of Signals-II</b> <b>Continuous &amp; Discrete-time Systems</b> <b>Classification of Systems-I</b>
<b>Week # 3</b> (20 <sup>th</sup> March 18)	<b>Classification of Systems-II</b> <b>Difference equation,</b> <b>Bibo Stability</b>
<b>Week # 4</b> (27 <sup>th</sup> March 18)	<b>Convolution Theorem-I</b>
<b>Week # 5</b> (03 <sup>rd</sup> April 18)	<b>Convolution Theorem-II</b>
<b>Week # 6</b> (10 <sup>th</sup> April 18)	<b>Properties of Convolution</b> <b>Revision</b>
<b>Week # 7</b> (17 <sup>th</sup> April 18)	<b>Fourier Series</b> <b>Continuous-Time Fourier Series</b>
<b>Week # 8</b> (24 <sup>th</sup> April 18)	<b>Discrete-Time Fourier Series</b> <b>Revision</b>
<b>Week # 9</b> (01 <sup>st</sup> May 18)	<b>MID Term Examination</b>
<b>Week # 10</b> (08 <sup>th</sup> May 18)	<b>Continuous Time Fourier Transform</b>
<b>Week # 11</b> (15 <sup>th</sup> May 18)	<b>Discrete Time Fourier Transform</b>
<b>Week # 12</b> (22 <sup>nd</sup> May 18)	<b>Sampling Theorem-I</b>
<b>Week # 13</b> (29 <sup>th</sup> May 18)	<b>Sampling Theorem-II</b>
<b>Week # 14</b> (05 <sup>th</sup> June 18)	<b>Z-Transform-I</b>
<b>Week # 15</b> (12 <sup>th</sup> June 18)	<b>Z-Transform-II</b>
<b>Week # 16</b> (19 <sup>th</sup> June 18)	<b>Revision &amp; Discussion</b>
<b>Week # 17</b> (26 <sup>th</sup> June 18)	<b>Final Examination</b>

## **Evaluation Criteria:**

1. Midterm	30 %
2. Quiz	10%
3. Assignments	10%
4. Final Examination	50%
<b>Total</b>	<b>100%</b>