ELG 3125 Summary Sheet

1 Basics of Signals and Systems

1.1 Transformations

1.2 Periodicity

1.3 Unit Impulse and Unit Step

1.4 System Properties

1.4.1 Memory

1.4.2 Invertibility

1.4.3 Causality

1.4.4 Stability

1.4.5 Time Invariance

1.4.6 Linearity

2 LTI Systems

2.1 Convolution in Discrete Time

2.2 Convolution in Continuous Time

2.3 Differential and Difference Equations

3 Fourier Series

3.1 Properties of Continuous Fourier Series

3.1.1 Linearity

3.1.2 Time Shifting

3.1.3 Time Reversal

3.1.4 Time Scaling

3.1.5 Multiplication

3.1.6 Conjugate

3.1.7 Parseval's Relation

3.2 Properties of Discrete Fourier Series

4 Fourier Transformations