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| COURSE | Name | : Signal and System Analysis |
| | Code | : EE185730 |
| | Credit(s) | : 2 |
| | Semester | : (Elective Course) |

Description of Course

The signal and system analysis course discusses signal and system representation both continuous and discrete time, the concept of continuous time LTI systems, continuous-time Fourier transforms and their applications, the concept of discrete time LTI systems, discrete Fourier transforms and their applications, Z transformations, back Z-transformations and their application, signal sampling and reconstruction process.

Learning Outcomes

Knowledge

(P01) Mastering the concepts and principles of science in a comprehensive manner, and to develop procedures and strategies needed for the analysis and design of systems related to the field of power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics as a preparation for further education or professional career.

Specific Skill

(KK01) Being able to formulate engineering problems with new ideas for the development of technology in power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

General Skill

(KU11) Being able to implement information and communication technology in the context of execution of his/her work.

Attitude

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.

(S12) Working together to be able to make the most of his/her potential.

Course Learning Outcomes

Knowledge

Mastering the concepts of signals and linear systems in time domain, frequency domain and complex frequencies.

Specific Skill

Able to analyze signals and linear time-invariant systems for continuous time and discrete time domains.

General Skill

Able to use Matlab / Simulink software to visualize and to do experiment of concepts of signal and linear systems.

Attitude

Demonstrating attitude of responsibility for work in his/her area of expertise independently.

Working together to be able to make the most of their potential.

Main Subjects

1. Concepts of Signal and System.
2. Continuous LTI System.
3. Continuous Fourier Transformation.
4. Discrete Time LTI System.
5. Discrete Time Fourier Transform.
6. Z Transformation.
7. Signal sampling and reconstruction.

Reference(s)

- [1] V. Oppenheim, A and T. Young, Ian : "Signal and Systems", Prentice-Hall of India, New Delhi 1990.
- [2] John G Proakis and Dimitris G, Manokalis, Digital Signal Processing: Principles, algoritms and applications, 4th Edition, Pearson International Edition, Pearson Prentice-Hall, NewJersey, 2007.
- [3] Monson H Hayes, Digital Signal Processing, Schaum's Outline Series, McGraw-Hill Companies, Inc., USA, 1999
- [4] Viney K Ingle and John G Proakis, Digital Signal Processing using Matlab, 3rd Ed., CENGAGE Learning, USA, 2012.

Prerequisite(s)

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