

PROFORMA FOR MODIFIED COURSE

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| 1. | Title of the course | Speech Signal Processing |
| 2. | Course number | EE5034 |
| 3. | Status of the course | Elective |
| 4. | Structure of credits | 3-0-0-3 |
| 5. | Offered to | PG |
| 6. | New course/modification to | Modification to Speech Signal Processing |
| 7. | To be offered by | Department of Electrical Engineering |
| 8. | To take effect from | July 2020 |
| 9. | Prerequisite | Nil |
| 10. | Whether approved by the Department | Yes |
| 11. | Course Objective(s): To introduce the basics of speech signal processing methods for extracting features of speech production mechanisms. | |
| 12. | Course Content: Background to speech signal processing, speech production mechanism and nature of the speech signal, basics of digital signal processing and equivalent representations of signals and systems, introduction to random processes, speech signal processing methods: short-time spectrum analysis and linear prediction analysis, hidden Markov models: an introduction to speech recognition, applications of SSP methods and neural network models for speech enhancement, speech synthesis and speaker recognition. | |
| 13. | Textbook(s): 1. Rabiner L R, Huang B H and Yegnanarayana B, <i>Fundamentals of Speech Recognition (Indian Subcontinent Adaptation)</i> , 1st Edition, Pearson Education (2009). | |
| 14. | Reference(s): 1. Deller J R Jr., Hansen J H L and Proakis J G, <i>Discrete-time Processing of Speech Signals</i> , 1st Edition, IEEE Preas (2000). 2. Quatieri T F, <i>Discrete-time Speech Signal Processing</i> , 1st Edition, Prentice-Hall (2002). 3. Rabinder L R and Juang B H, <i>Fundamentals of Speech Recognition</i> , 1st Edition, Pearson Education (1993). 4. Rabiner L R and Schafer R W, <i>Theory and Applications of Digital Speech Processing</i> , 1st Edition, Pearson Education (2011). | |