



**Course Name:** Audio and Speech Signal Processing  
**Course Code:** UECP413

**Session:** 2023-24  
**Semester/Section:** VII<sup>th</sup>/C

<b>Course Outcomes</b>	Upon successful completion of this course, student will be able to:
	CO-1 Comprehend the speech production and hearing models.
	CO-2 Design and apply models for speech and audio signal processing.
	CO-3 Apply speech estimation techniques for speech and audio signals.
	CO-4 Implement the methods for speech coding for speech signals.
	CO-5 Implement the methods for speech enhancement and speaker recognition for speech signal.

### List of Experiments

Sr. No.	Practical Name	CO Attained
1.	Write MATLAB program to record voiced speech signal	C01
2.	Write MATLAB program to record unvoiced speech signal	C01
3.	Write MATLAB program to plot spectrum of voiced and unvoiced speech signal	C02
4.	To express the characteristics of speech waveform in terms of the production characteristics by identifying/locating voiced/unvoiced/plosive/silence regions and providing acoustic phonetic description of the regions( <a href="https://ssp-iiith.vlabs.ac.in/exp/short-time-spectrum-analysis/">https://ssp-iiith.vlabs.ac.in/exp/short-time-spectrum-analysis/</a> )	C02
5.	To study the effect of size of the analysis window (less than one pitch period, one pitch period, two to four pitch periods)( <a href="https://ssp-iiith.vlabs.ac.in/exp/short-time-spectrum-analysis/">https://ssp-iiith.vlabs.ac.in/exp/short-time-spectrum-analysis/</a> )	C03
6.	To study the effect of shape of the analysis window (rectangular, Hamming and Hanning window functions).( <a href="https://ssp-iiith.vlabs.ac.in/exp/short-time-spectrum-analysis/">https://ssp-iiith.vlabs.ac.in/exp/short-time-spectrum-analysis/</a> )	C03
7.	To study the relation between formant frequencies of a vocal tract system and the perception of sounds.( <a href="https://ssp-iiith.vlabs.ac.in/exp/formant-synthesis/">https://ssp-iiith.vlabs.ac.in/exp/formant-synthesis/</a> )	C04
8.	Implementation of Project related to Speech Coding and Speech Recognition	C04
9.	Implementation of Project related to Speech Coding and Speech Recognition	C05
10.	Implementation of Project related to Speech Coding and Speech Recognition	C05