Detailed Syllabus

(Lecture-wise Breakup)

Course Code	15B11EC411	**Semester** EVEN **(specify Odd/Even)**	**Semester** 4th **Session** 2022 -2023 **Month from** Jan to June
Course Name	ANALOGUE ELECTRONICS		
Credits	3	**Contact Hours**	3-0-0
Faculty (Names)	**Coordinator(s)**	Dr. Ajay Kumar, Dr. Bhartendu Chaturvedi	
	Teacher(s) (Alphabetically)	Dr. Ajay Kumar, Dr. Bhartendu Chaturvedi, Mr. Shivaji Tyagi	

COURSE OUTCOMES		**COGNITIVE LEVELS**
C213.1	To analyse biasing and frequency response of different BJT and MOS based amplifiers.	Understanding Level (C2)
C213.2	Explain and analyze basic structures of differential amplifiers and current mirrors.	Analyzing Level (C4)
C213.3	Explain the effect of feedback on amplifier characteristics and design of various types of oscillators.	Understanding Level (C2)
C213.4	Apply basic understanding of operational amplifier to design various applications.	Applying Level (C3)

Module No.	**Title of the Module**	**Topics in the Module** **(yellow highlighted part shows the content covered in PBL CO3, CO4, CO5)**	**No. of Lectures for the module**
1.	BJT Amplifier	Single stage (CE, CB, CC), Small-Signal Model, Multistage: CE-CE, Cascode, Darlington-pair, high (hybrid-π) frequency model, Frequency Response of CE Amplifier, Gain-bandwidth product, CE short circuit current gain	10
2.	Introduction of MOSFET and analysis of MOS amplifier	Introduction of MOSFET, characteristics and basing (voltage and current), small signal models: common source, common gate and common Drain, high frequency model and Frequency Response of CS amplifier	8
3.	Basic Building Blocks of Op-amp (BJT and MOS)	Basic Building Blocks of Op-amp: Basic differential pair, large and small signal analysis of differential amplifier, differential amplifier with active load, current mirror	11
4.	Feedback	Four basic feedback topologies: series-shunt, series-series, shunt-shunt, shunt-series, Barkhausen stability criterion for oscillators, Sinusoidal oscillators, RC Phase shift oscillator, Wien bridge oscillator	6
5.	Measurement of Op-amp parameters	Measurement of Op-Amp: Output Offset Voltage, Input offset voltage, Input Bias, Offset Current, Input current, CMRR, Slew rate, Open loop and closed loop gain, PSRR.	3
6.	Application of Op-Amp	Comparators, Schmitt trigger, Waveform generator (square wave, triangular wave), Instrumentation amplifier.	4
		Total number of Lectures	**42**

Project based learning: In this course, using BJT and MOSFETs we analyse and design various circuits such as single stage, multi-stage amplifiers, operational amplifiers, oscillators and comparators and waveform generators. The PBL assignment is based on the simulation of above mentioned circuits using SPICE simulator. In this process, students may transform theory into their own knowledge and improve their ability of independent thinking, analyzing and solving various problems.

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)	
1.	A. S. Sedra & K.C. Smith, Microelectronic Cicruits Theory and Application, 6th Edition, Oxford University Press, 2011
2.	Donald Neamen, Microelectronic Circuit Analysis and Design, 4th Edition, Mc Graw Hill
3.	R. A. Gayakwad, Op Amp and Linear Integrated Circuit Technology, 3rd Edition, Prentice-Hall India, 1999.

Detailed Syllabus

Lab-wise Breakup

Course Code	15B17EC471	**Semester:** EVEN **(specify Odd/Even)**	**Semester** 4th **Session** 2022-23 **Month from** January to June
Course Name	Analogue Electronics Lab		
Credits	1	**Contact Hours**	0-0-2

Faculty (Names)	**Coordinator(s)**	Mr. Shivaji Tyagi and Dr. Bhartendu Chaturvedi
	Teacher(s) (Alphabetically)	Dr. Ajay Kumar, Dr. Archana Pandey, Dr. Bhartendu Chaturvedi, Dr. Garima Kapur, Mr. Shivaji Tyagi

COURSE OUTCOMES	**DESCRIPTION** **At the end of the course, students will be able to:**	**COGNITIVE LEVELS**
C275.1	Plot the transient, frequency response of the first-order RC circuit using SPICE/MULTISIM and analyze the bias points for BJT.	Analyzing Level (C4)
C275.2	Analyze and plot the frequency response of single-stage BJT/MOS amplifiers	Analyzing Level (C4)
C275.3	Analyze and implement the BJT based current mirrors	Analyzing Level (C4)
C275.4	Analyze and determine the differential gain, common-mode gain and CMRR of BJT based differential amplifier and implement the Op-Amp circuits to use it in different applications.	Evaluating Level (C5)

Module No.	**Title of the Module**	**List of Experiments**	**CO**
1.	Introduction and demonstration of Simulation tool with suitable example	Installation of PSPICE/MULTISIM light version on GPL with operating instructions. Simulate transient and frequency response of first-order RC circuit for the input of sine and square waveform.	**C275.1**
2.	Study and Analyzing Biasing Techniques	Implement/simulate the dependence of β_{dc} on the collector bias current for the given discrete BJT transistor BC547B/Q2N2222A using breadboard and/or SPICE/MULTISIM simulator.	**C275.1**
3.	Study and Analyzing Biasing Techniques	Implement/simulate using SPICE/MULTISIM simulator the voltage biasing techniques such as voltage divider, collector to base bias and fixed bias for DC "Q-point" stability using BJT transistor BC547B/Q2N222A.	**C275.1**
4.	Large signal and small-signal analysis of CE amplifier	Implement/simulate using SPICE/MULTISIM simulator the single-stage CE amplifier circuit to determine the instantaneous node voltages and branch currents for triangular input v_{in} = 1.0V (p-p) using a discrete BJT transistor. Also, determine the maximum amplitude of v_{in} which is allowed to be used in the amplifier.	**C275.2**
5.	Design of BJT based amplifier	Implement/simulate using SPICE/MULTISIM simulator a single stage BJT amplifier for given specifications.	**C275.2**
6.	Frequency Response of	Implement/simulate using SPICE/MULTISIM simulator the frequency response of the Common Source amplifier using N-channel MOSFET. Determine	**C275.2**

	Amplifier	a) Upper, lower 3-dB frequency b) Bandwidth	
7.	Current Mirror	Design and implement/simulate a basic BJT current mirror using a discrete transistor for reference current of 1mA using SPICE/MULTISIM simulator.	**C275.3**
8.	Current Mirror	Implement/simulate a Wilson current mirror output current of 1mA using SPICE/MULTISIM simulator.	**C275.3**
9.*	Differential Amplifier	Implement/simulate using SPICE/MULTISIM simulator a single-stage differential amplifier and determine the following: a) Frequency response of differential gain A_d. b) Frequency response of common-mode gain $A_{CM.}$ c) Common Mode Rejection Ratio (CMRR).	**C275.4**
10.	Applications of OP-AMP	Implement/simulate using SPICE/MULTISIM simulator and validate applicability of Op-Amp using 741 IC in different applications	**C275.**4
11.	Analyze RC Filters	**Virtual Lab**: Analyze and design RC circuit based Low pass and High Pass filters (http://vlabs.iitkgp.ac.in/be/exp14/index.html)	**C275.1**
12.	Study and Analyze BJT Amplifier	**Virtual Lab**: Study and analyze of BJT CE amplifier (http://vlabs.iitkgp.ac.in/be/exp13/index.html)	**C275.2**
13.	Applications of OP-AMP	**Virtual Lab**: Study of different applications of Op-Amp (http://vlabs.iitkgp.ac.in/be/exp17/index.html#) (http://vlabs.iitkgp.ac.in/be/exp18/index.html) (http://vlabs.iitb.ac.in/bootcamp/labs/ic/exp4/exp/simulation.php)	**C275.4**

Evaluation Criteria

Components	**Maximum Marks**
Mid Viva	20
End Viva	20
Day to Day	60
Total	**100**

Project-Based Learning: This Lab course starts with the introduction and demonstration of simulation tool(s) such as MULTISIM/PSPICE. Furthermore, the experiments of this Lab course also help students to analyze and design BJT and MOS based important analogue structures by means of simulation tools such as MULTISIM/PSPICE. Small groups of three or four students work in cooperation using PBL techniques to solve design-oriented experiments. Students' opinions have been obtained by means of a course exit survey at the end of the course.

*** These are advanced-level experiments.**

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Textbooks, Reference Books, Journals, Reports, Websites etc. in the IEEE format)

1.	A. S. Sedra & K.C.Smith, Microelectronic Circuits Theory and Application, 6th Edition, Oxford University Press, 2015(Text Book)
2.	Marc Thompson, Intuitive Analog Circuit Design, 2nd Edition, Elsevier Publication, 2013

Detailed Syllabus
Lecture-wise Breakup

Course Code	15B11EC413	**Semester** Even	**Semester** IV **Session** 2022 –2023 **Month from** Jan to June
Course Name	DIGITAL SIGNAL PROCESSING		
Credits	4	**Contact Hours**	**4**

Faculty (Names)	**Coordinator(s)**	Sajaivir Singh , Vineet Khandelwal
	Teacher(s) (Alphabetically)	Madhu Jain

COURSE OUTCOMES		**COGNITIVE LEVELS**
C215.1	Recall the principles of z-transforms, explain the DFTs (Discrete Fourier Transform) and develop FFT (Fast Fourier Transform) algorithms for DFT.	Applying (C3)
C215.2	Construct and Analyze the digital FIR (Finite Impulse Response) and IIR (Infinite Impulse Response) filters.	Analyzing (C4)
C215.3	Demonstrate multi-rate signal processing and relate DSP (Digital Signal Processing) in various applications.	Understanding (C2)

Module No.	**Title of the Module**	**Topics in the Module**	**No. of Lectures for the module**
1.	**Review of Discrete time Signals and Systems**	Review of discrete–time sequences and systems, discrete time system analysis using Z transform.	**3**
2.	**Discrete Fourier Transform and FFT**	Discrete Fourier Transform (DFT) and its properties, Linear filtering methods based on DFT, Frequency analysis of signals using the DFT, Fast Fourier Transform (FFT) algorithms using decimation in time and decimation in frequency techniques.	11
3.	**FIR Filter design**	Basic structures of digital filters; Significance of Linear phase response, FIR filters design - Frequency sampling and Windowing techniques, Computer aided design.	8
4.	**IIR Filter design**	Approximation of filter functions: Butterworth, Chebyshev, Elliptic; IIR filter design based on analog filter functions- Impulse Invariant and modified invariant response techniques, Bilinear transformation method.	10
5.	**Multi-rate Digital Signal Processing**	Decimation & Interpolation, Filter design with sampling rate conversion by a rational factor I/D	5
6.	**DSP Applications**	Applications in speech and image processing, and power	7

		spectrum estimation.	
		Total number of Lectures	44

Evaluation Criteria

Components	**Maximum Marks**
T1	20
T2	20
End Semester Examination	35
TA	25
Total	**100**

Project based learning: Students will learn different techniques used for the generation, transformation, extraction and interpretation of information via discrete signals which is essential for smart phones, home appliances, healthcare devices, cameras and in general for many digital systems. Student shall be given various practical situation-based design exercises to be implemented in MATLAB or OCTAVE. This would enable them to recall and apply various techniques and algorithms taught in course to design and analyse the required system that meets the given technical specification.

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)

1.	L. Tan and Jean Jiang , Digital Signal Processing Fundamentals and Applications, Third Edition, Academic Press, 2013
2.	J. G. Proakis & D. G. Manolakis, Digital Signal Processing, Principles, Algorithms and Applications, Fourth edition, PHI, 2007.
3.	S. K. Mitra, Digital Signal Processing: A Computer Based Approach, Fourth Edition, McGraw Hill, 2013.
4.	L. R. Rabiner, B. Gold, Theory and application of digital signal processing, Third Edition, PHI, 2012
5.	A. Antoniou, Digital Signal Processing: Signals, Systems, and Filters, TMH, 2006

Detailed Syllabus
Lab-wise Breakup

Course Code	**15B17EC473**	**Semester Even**	**Semester** IV **Session** 2022 -2023 **Month from** Jan – Jun
Course Name	**Digital Signal Processing (DSP) Laboratory**		
Credits	1	**Contact Hours**	0-0-2

Faculty (Names)	**Coordinator(s)**	Dr. Madhu Jain, Dr. Kapil Dev Tyagi
	Teacher(s) (Alphabetically)	Dr. Vineet Khandelwal, Dr. Vijay Khare

COURSE OUTCOMES		**COGNITIVE LEVELS**
C277.1	Recall and interpret discrete time signals and systems in time domain and in frequency domain	Understanding [Level 2]
C277.2	Develop and demonstrate coding skills from basic mathematical operations to complex operations like DFT and FFT.	Applying [Level 3]
C277.3	Identify and examine different digital filter structures.	Analyzing [Level 4]
C277.4	Determine and observe magnitude and phase characteristics (Frequency response Characteristics) of digital IIR-Butterworth, Chebyshev filters and digital FIR filters using window techniques for various applications of DSP.	Evaluating [Level 5]

Module No.	**Title of the Module**	**List of Experiments**	**CO**
1.	Introduction to MATLAB	Introduction to the MATLAB and its features.	C277.1
2.	Introduction to applications of MATLAB	Introduction to the different applications of MATLAB.	C277.1
3.	Discrete-Time Signals	Generation of discrete time signals with different operation on independent and dependent variable.	C277.1
4.	LTI Systems	Write your own MATLAB function to implement linear convolution as an operation to analyze discrete time LTI system.	C277.1
5.	Z-transform	Compute z- transform and inverse z-transform of a discrete time signals and systems. Plot pole-zero map of the same using symbolic tool box.	C277.1
6.	Discrete Fourier Transform (DFT)	Write your own MATLAB function to compute DFT (Discrete Fourier Transform) and IDFT (Inverse Discrete Fourier Transform) for the spectral analysis of signals.	C277.2
7.	Spectral Analysis	To determine magnitude and power spectrum of given signal.	C277.2
8.	Circular Convolution	Write your own MATLAB function ‘mycirconv’ to compute circular convolution of two sequences.	C277.2
9.	FFT	Develop radix-2 butterfly FFT (Decimation in Time) algorithm for the computation of N-point dft.	C277.2

10.	FIR Filter	Write MATLAB program to design digital FIR filter employing windowing technique.	C277.4
11.	IIR Filter	Write MATLAB program to design IIR digital filter for a given specification using bilinear transformation and impulse invariant method.	C277.4
12.	IIR Structures	Write MATLAB program for realization of digital IIR filter using direct form-I & II, cascade and parallel method.	C277.3
13.	DFT Properties	Virtual Lab: Study of Transform domain properties and its use.	C277.2
14.	FIR Filter Study	Virtual Lab: Study of FIR filter design using window method.	C277.4
15.	IIR Filter Study	Virtual Lab: Study of Infinite Impulse Response (IIR) filter.	C277.4

Evaluation Criteria

Components	**Maximum Marks**
V1	20
V2	20
AC and Virtual Lab Exp	30
Attendance	15
Report	15
Total	**100**

Project based learning: Students will design Digital filters (FIR and IIR) for the given design specifications using MATLAB programming as well Filter Design Analysis tool. Additionally, students in group sizes of two-three will realize various applications of DSP employing digital filters.

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)

1.	Sanjit K. Mitra, Digital Signal Processing: With DSP Laboratory Using MATLAB: A Computer-Based Approach, *4th Edition*, *TMH*, 2013.
2.	Vinay K. Ingle, John G. Proakis, Digital Signal Processing Using MATLAB, *3rd Edition*, *Cengage Learning*, 2012.

Detailed Syllabii
Lecture-wise Breakup

Subject Code	18B11EC212	**Semester** **EVEN**	**Semester 4th Session** 2022-23 **Month from Jan to June**
Subject Name	ANALOG AND DIGITAL COMMUNICATION		
Credits	4	**Contact Hours**	3-1-0

Faculty (Names)	**Coordinator(s)**	Dr Ashish Goel, Dr Megha Agarwal
	Teacher(s) (Alphabetically)	Vishal saxena,

COURSE OUTCOMES		**COGNITIVE LEVELS**
C211.1	Understand need of modulation and differentiate among various amplitude modulation schemes and design simple systems for generating and demodulating amplitude modulated signals.	ApplyingLevel (C1)
C211.2	Analyze the generation and detection of FM signal and design basic systems for the indirect and direct generation of FM signals.	Analyzing Level (C4)
C211.3	Understand the concepts of transmitters and receivers for analog modulations, Sampling process, time division multiplexing and GSOP.	Understanding Level (C2)
C211.4	Understand the concepts of waveform coding techniques, Line coding schemes and analysis of ISI Mitigation Techniques	Analyzing Level (C4)
C211.5	Understand the concepts of digital modulation techniques and evaluate their probability of error and bandwidth efficiency.	Evaluating Level (C5)

Module No.	**Subtitle of the Module**	**Topics**	**No. of Lectures**
1.	Introduction	Elements of a communication system;Analog and digital signals, bandlimited signals and systems, bandwidth	2
2.	Amplitude modulation	Introduction to modulation; AMSC,DSB, SSB, VSB Communication. Detection of AM signals: Coherent detection, Envelope detection,Costas receiver.	7
3.	Angle modulation	Concepts of FM and PM,Narrowband and wideband FM, Direct and indirect methods of FM generation, Detection of FM signals	6
4.	Transmitters , Receivers and Multiplexing Techniques	AM and FM Transmitters, Superheterodyne AM and FM Receivers. FDM,TDM, Interchannel crosstalk and bandwidth effects	3
5.	Sampling and Quantization techniques	Time and frequency domain sampling with aperture effects, Reconstruction of signals, Quantization process and mean	5

		square quantization error, GSOP.	
6.	Speech Coding ,Line Coding and Baseband Digital Transmission	Pulse Code modulation,Line Codes: Unipolar-NRZ, polar-NRZ, Unipolar-RZ, Bipolar-RZ, Manchester Code, DPCM, DM, Bit rate and bandwidth of digital signals, ISI Mitigation Techniques	11
7.	Digital Modulation Techniques	ASK, FSK ,PSK, QPSK Modulation, 16-QAM, Demodulation, Constellation diagrams, BER and their BW calculation,	9
		Total number of Lectures	43

Evaluation Criteria

Components	**Maximum Marks**
T1	20
T2	20
End Semester Examination	35
TA	25
Total	**100**

Project based learning: Here, students will learn the process of analog and digital modulation schemes as it is of the utmost importance to understand the process of communication system and to design the same. Student will be able to design the communicationsystem as per requirements and some simulation on Matlab can also be performed to analyze the same . Understating of these techniques will further help to work in any communication based industry.

Recommended Reading(Books/Journals/Reports/Websites etc.: Author(s), Title, Edition, Publisher, Year of Publication etc. in IEEE format)

1.	LathiB.P, Modern Digital and Analog CommunicationSystems, 5th /ed ,Oxford University Press,2018
2.	H. Taub, D. L. Schilling and GautamSaha, Principles of Communication Systems, 4th/ed,TMH, 2017
3.	S.Haykin, Digital Communication Systems,John Wiley & Sons, 2013

Detailed Syllabus
Lab-wise Breakup

Course Code	18B15EC212	**Semester** **Even**	**Semester IV Session 2022-2023** Month from **Jan to June**
Course Name	***Analog and Digital Communication Lab***		
Credits	**1**	**Contact Hours**	2 Hrs. per week

Faculty (Names)	**Coordinator(s)**	Reema Budhiraja, Raghvendra Kumar Singh
	Teacher(s) (Alphabetically)	Ashish Goel, Neetu Joshi ,Rahul Kaushik, Ritesh Kumar Sharma

COURSE OUTCOMES		**COGNITIVE LEVELS**
C272.1	Design of circuits for analogue modulation/demodulation techniques.	Analyzing (C4)
C272.2	Understand the concepts of sampling process, and time division multiplexing.	Understanding (C2)
C272.3	Design and implement digital modulation techniques.	Analyzing (C4)
C272.4	Implementation of modulation techniques using MATLAB.	Applying (C3)

Module No.	**Title of the Module**	**List of Experiments**	**CO**
1.	**Analogue modulation/demodulation**	Implement amplitude modulation and DSB-SC modulation circuit using IC AD633 & calculate modulationindex for various modulating signals and study the over, exact and under modulation.	**CO1**
2.	**Analogue modulation/demodulation**	Demodulate amplitude modulated signal using Envelope detector.	**CO1**
3.	**Analogue modulation/demodulation**	Design a Frequency modulation (FM) circuit using IC XR 2206 and determine the frequency deviation and modulation index.	**CO1**
4.	**Frequency mixer**	Design a Frequency mixer circuit using ICAD633	**CO1**
5.	**Sampling**	Design a circuit to sample a given signal using IC LF398 and reconstruct the signal from sampled waveform	**CO2**
6.	**Multiplexing**	Study of TDM with different receiver synchronization techniques	**CO2**

7.	**Digital modulation/demodulation techniques**	Implement and Test Amplitude Shift Keying Circuit using IC LF 398	**CO3**
8.	**Digital modulation/demodulation techniques**	Implement and Test Frequency Shift Keying Circuit using IC LF 398	**CO3**
9.	**Digital modulation/demodulation techniques**	Implement and Test Phase Shift KeyingCircuit using IC LF 398.	**CO3**
10.	**Digital modulation/demodulation techniques**	Study of Pulse Code Modulator (PCM) and Demodulator.	**CO3**
11.	**Digital modulation/demodulation techniques**	Study of Delta Modulation and Demodulation	**CO3**
12.	**Digital modulation/demodulation techniques**	Generation & detection of ASK, FSK & PSK using trainer kit	**CO3**
13.	**Software implementation of digital modulation/demodulation techniques**	Implement amplitude modulation using MATLAB simulation	**CO4**
14.	**Software implementation of digital modulation/demodulation techniques**	Implement ASK and PSK modulation using MATLAB simulation	**CO4**

Evaluation Criteria	
Components	**Maximum Marks**
Viva 1(Mid Sem Viva)	20
Viva 2(End Sem Viva)	20
Assessment Components	30
Attendance	15
Lab Record	15
Total	**100**

Assessment Components (ACs)

AC1. Identification of components to be used & correct Implementation of circuit on bread board/KIT
AC2. Reading and trace work
AC3. Understanding of the experiment
AC4. Lab Record Assessment

Project Based Learning: This course provides practical exposure to communication system building blocks, such as filters, mixers etc. The students are trained for constructing the circuits for analog and digital communication. Students get hands on experience while working on bread board and design Modulation/Demodulation circuits using discrete components.

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)

1.	Lathi B.P, Modern Digital and Analog Communication Systems, 5th /ed ,Oxford University Press, 2018
2.	S.Haykin, Digital Communication Systems ,John Wiley & Sons, 2013
3.	Lab Manuals

Detailed Syllabus
Lecture-wise Breakup

Course Code	**15B1NHS433**	**Semester** EVEN **(specify Odd/Even)**	**Semester** IV **Session** 2022 -2023 Month Jan- June
Course Name	**INTRODUCTION TO SOCIOLOGY**		
Credits	**3(2-1-0)**	**Contact Hours**	3

Faculty (Names)	**Coordinator(s)**	Prof Alka Sharma
	Teacher(s) (Alphabetically)	Ms.Shikha Kumari

COURSE OUTCOMES		**COGNITIVE LEVELS**
C206-7.1	Demonstrate an understanding of sociological perspectives and concepts.	Remembering (C1)
C206-7.2	Explain the concept of social stratification and types of stratification as class, caste and gender.	Understanding (C2)
C206-7.3	Apply the major sociological perspectives, social concepts and methods in the systematic study of society	Applying(C3)
C206-7.4	Analyze the relevance of various social Institutions in societies and how it shapes and influences social interactions.	Analyzing (C4)

Module No.	**Title of the Module**	**Topics in the Module**	**No. of Lectures for the module**
1.	Introduction	Introduction to sociology as a discipline of social science, difference between common sense and sociology, Major sociological perspective and methods, the sociological imagination	5
2.	Basic Concepts of Sociology	Groups, sub-groups, society, characteristics of society, culture, institutions, Institutionalization, Conformity, Social Change	6
3.	Social stratification	Stratification-concept, theories and type. Basis of stratification caste, class, gender and race, status and Roles	5
4.	Sociology of Institutions	Kinship, Family ,Religion, Education &Economy in Society	6
5.	Process of Change and Mobility	Process of Social Change in Indian Society: Sanskritization, Westernization, Modernization, Urbanization	4
6.	Sociology of Collectivity	Collective Action and Social Movements	2
		Total number of Lectures	**28**

Evaluation Criteria

Components	**Maximum Marks**
T1	20
T2	20
End Semester Examination	35
TA	25 (Project basedpresentation, assignment and quiz)
Total	**100**

The students will find out which aspect of Organizational culture influences the employee' performance and formulate recommendations regarding organizational culture, which will help the organization to be

more inclusive of different cultural practices of the employees (tackle issues such as gender equity, respect for other languages, reduce racial identity crisis, reduce class and caste discrimination, promote respect for all religions etc) to increase their belongingness towards the organization.

Recommended Reading material: Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format)	
1	Johnson, Harry M. *Sociology: a systematic introduction*. Routledge, 2013.
2	Rawat, H. K. *Sociology: basic concepts*. Rawat Publications, 2007.
3	Macionis, John J. *Society: the basics*. Pearson/Prentice Hall, 2009.
4	C. Wright. And Mills, *The Sociological Imagination*, Oxford: Oxford University Press, 1959.
5	Peter L Berger, *The Social Construction of Reality: a Treatise in the Sociology of Knowledge. Garden City,* New York: Anchor, 1966.
6	Conley and Dalton, *You May Ask Yourself: An Introduction to Thinking Like a Sociologist*, 2nd Ed, W. W. Norton & Company New York, 2011. ISBN: 0393935175 or 978-0393935172
7	Ballentine and Roberts, *Our Social World: Introduction to Sociology*, 4th Edition, Sage. 2013.
8	Robert Parkinand Linda Stone, (ed.). *Kinship and Family: An Anthropological Reader*, U.S.A.: Blackwell, 2000, selected chapters