Detailed Syllabii
Lecture-wise Breakup

Subject Code	18B11EC212		Semester EVEN	Semester 4th Session 2023-24
				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 Raghavendra K Singh
	Teacher(s) (Alphabetically)	Dr Rahul Kaushik, Dr Yogesh Kumar, Dr. Reema Budhiraja, Dr Abhijeet Upadhayay

COURSE OUTCOMES		COGNITIVE LEVELS
C211.1	Explain the need of modulation, concepts of transmitters and receivers for analog modulations, Sampling process, time division multiplexing, GSOP, waveform and line coding schemes.	Understanding Level (C2)
C211.2	Utilize the concept of GSOP for the understanding of digital modulator and demodulator circuits.	Applying Level (C3)
C211.3	Analyze the various analog modulation and demodulation schemes and the effect of ISI in digital communication systems.	Analyzing Level (C4)
C211.4	Evaluate the probability of error and bandwidth efficiency of digital modulation schemes	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 square quantization error, GSOP.	5
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: 2023-24
			Month: from January to June 2024
Course Name	Analog and Digital Communication Lab		
Credits	1	Contact Hours	2 Hrs per week

Faculty (Names)	Coordinator(s)	Dr. Reema Budhiraja and Dr. Abhijeet Upadhya
	Teacher(s) (Alphabetically)	Dr. Ashish Goel, Dr. Alok, Dr. Pimmy, Dr. Rahul, Dr. Raghvenda Kumar Singh, Dr. Neetu Joshi

COURSE OUTCOMES		COGNITIVE LEVELS
CO1	Description of process of amplitude modulation/ demodulation techniques.	Remembering (C1)
CO2	To apply the concepts of frequency modulation and frequency mixing.	Understanding Level (C2)
CO3	To analyze techniques involved in of sampling process and time division multiplexing.	Applying Level (C3)
CO4	To design passband digital modulation techniques using trainer kits and software and to implement baseband pulse modulation techniques.	Analyzing Level (C4)

Module No.	Title of the Module	List of Experiments	CO
1.	Analogue modulation/demodulation	Demonstrate amplitude modulation and DSB-SC modulation circuit using IC AD633 & calculate modulation index for various modulating signals and study the over, exact and under modulation.	CO1
2.	Analogue modulation/demodulation	Demonstrate amplitude demodulation signal using Envelope detector.	CO1
3.	Analogue modulation/demodulation	To build Frequency modulation (FM) circuit using IC XR 2206 and determine the frequency deviation and modulation index.	CO2
4.	Frequency mixer	To build Frequency mixing circuit using ICAD633.	CO2
5.	Sampling	Analyze the sampling technique through a circuit to sample a given signal using IC LF398 and reconstruct the signal from sampled waveform.	CO3
6.	Multiplexing	Analyze TDM system with different receiver synchronization techniques	CO3
7.	Passband Digital modulation/demodulation techniques	Design Amplitude Shift Keying Circuit using IC LF 398.	CO4
8.	Passband Digital modulation/demodulation techniques	Design and Test Frequency Shift Keying Circuit using IC LF 398.	CO4
9.	Passband Digital modulation/demodulation techniques	Design Phase Shift Keying Circuit using IC LF 398.	CO4

10.	**Baseband Digital modulation/demodulation techniques**	Implementation of PCM on the basis of Three Modes of Transmission.	**CO4**
11.	**Baseband Digital modulation/demodulation techniques**	Implementation of operation of Delta Modulation and Demodulation.	**CO4**
12.	**Passband Digital modulation/demodulation techniques**	Design, Generation & detection of ASK, FSK & PSK using trainer kit.	**CO4**
13.	**Software implementation of analog modulation techniques**	Demonstrate amplitude modulation using MATLAB simulation.	**CO1**
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
File Record	15
Attendance	15
Total	**100**

Assessment Components (ACs):

AC1: To build up understanding of theoretical concept of the experiment.
AC2: Hardware/software implementation of the experiment.

Project Based Learning: This course provides practical exposure to communication systems building blocks. The students are trained for constructing the circuit 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.	B. P. LATHI, "Modern Digital and Analog Communication Systems," *Oxford University Press*, 3rd edition, 2005.
2.	S. Haykin, "Communication Systems," *John Wiley & Sons*, Intl. Ed, 2004.
3.	Lab Manuals

Course Code		15B11EC411	Semester: EVEN (specify Odd/Even)		Semester: 4ᵗʰ Session: 2023 -2024 Month from Jan to June	
Course Name		ANALOGUE ELECTRONICS				
Credits		4		Contact Hours		3-1-0
Faculty (Names)		Coordinator(s)	Dr. Atul Kumar, Mr. Varun Goel			
		Teacher(s) (Alphabetically)	Dr. Archana Pandey, Dr. Atul Kumar, Dr. Bhartendu Chaturvedi, Dr. Rishibrind Kumar Upadhyay, Mr. Varun Goel			

COURSE OUTCOMES		COGNITIVE LEVELS
C213.1	Summarize the basics of MOSFET, different feedback topologies, oscillators and operational amplifier parameters.	Understanding Level (C2)
C213.2	Apply the concepts of BJT and MOSFET to develop the differential pair.	Applying Level (C3)
C213.3	Analyze the different BJT/MOS-based amplifiers using their small signal models, discover the frequency responses of CE/CS Amplifiers.	Analyzing Level (C4)
C213.4	Determine the various parameters of oscillators, current mirrors, and op-amp based applications.	Evaluating Level (C5)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	BJT amplifiers	Single stage (CE, CB, CC) amplifiers, small-signal models, Multistage: CE-CE, Cascode, Darlington-pair, high (hybrid-π) frequency model, frequency response of CE Amplifier, Gain-bandwidth product, CE short circuit current gain.	11
2.	Introduction of MOSFET and analyses of MOS amplifiers	Introduction of MOSFET, characteristics and biasing (voltage and current), small signal models, single stage (CS, CG, CD) amplifiers, high-frequency model and frequency response of CS amplifier.	11
3.	Basic building blocks of Op-amp (BJT and MOS)	Basic building blocks of Op-amp: Basic BJT/MOS based differential pairs, analyses of differential amplifiers, current mirrors.	10
4.	Feedback and oscillators	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.	4
5.	Op-amp parameters	Op-amp parameters: output offset voltage, input offset voltage, input bias current, offset current, CMRR, slew rate, open loop and closed loop gain, PSRR.	2
6.	Applications 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 BJTs and MOSFETs, we analyze and evaluate various circuits. The PBL assignment is based on the simulation of such circuits using PSPICE/MULTISIM 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 2023-24 Month from January to June		
Course Name	Analogue Electronics Lab				
Credits	1		Contact Hours	0-0-2	

Faculty (Names)	Coordinator(s)	Dr. Rishibrind Kumar Upadhyay and Dr. Bhartendu Chaturvedi
	Teacher(s) (Alphabetically)	Archana Pandey, Atul Kumar, Bhartendu Chaturvedi, Ravi Kumar Verma, Rishibrind Kumar Upadhyay, Shivani, Varun Goel

COURSE OUTCOMES	DESCRIPTION At the end of the course, students will be able to:	COGNITIVE LEVELS
C275.1	Understand the concept of the transient and frequency response of the first-order RC circuit and the concept of DC bias in BJT.	Understanding Level (C2)
C275.2	Identify the concept of the frequency response of single-stage BJT/MOS amplifiers.	Applying Level (C3)
C275.3	Analyze the functioning of BJT-based current mirror circuits.	Analyzing Level (C4)
C275.4	Evaluate the important characteristic(s)/parameter(s) of BJT-based differential amplifier and assess 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 responses of first-order RC circuit for the input of square waveform.	C275.1
2.	Biasing Techniques	Implement the dependence of β_{dc} on the collector bias current for the given discrete BJT transistor BC547B using a breadboard.	C275.1
3.	Biasing Techniques	Implement using the breadboard the voltage biasing techniques such as voltage divider, collector to base bias, and fixed bias for DC "Q-point" stability using BJT transistor BC547B.	C275.1
4.	Large signal and small-signal analyses of CE amplifier	Implement using the breadboard the single-stage common emitter (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.	Frequency Response of Amplifier	Simulate using PSPICE/MULTISIM simulator the frequency response of the single-stage common emitter (CE) amplifier using n-p-n BJT. Determine a) lower 3-dB frequency, b) Upper 3-dB frequency, c) Bandwidth.	C275.2
6.	Frequency Response of Amplifier	Simulate using PSPICE/MULTISIM simulator the frequency response of the single-stage common source (CS) amplifier using n-channel MOSFET. Determine a) lower 3-dB frequency, b) Upper 3-dB frequency, c) Bandwidth.	C275.2
7.	Current Mirror	Simulate using PSPICE/MULTISIM simulator a basic BJT current	C275.3

		mirror using a discrete transistor for reference current of 1mA.	
8.	Current Mirror	Simulate a Wilson current mirror for output current of 1mA using the PSPICE/MULTISIM simulator.	**C275.3**
9.	Differential Amplifier	Simulate using PSPICE/MULTISIM simulator a single-stage/multi stage differential amplifier and determine the important characteristic(s)/parameter(s).	**C275.4**
10.	Applications of OP-AMP	Implement and validate the applicability of Op-Amp on a breadboard using 741 IC in different applications (Integrator and Differentiator).	**C275.4**
11.	Understand 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 BJT Amplifier	**Virtual Lab**: Study 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)	**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 2023–2024 Month from January to June
Course Name	DIGITAL SIGNAL PROCESSING			
Credits	4		**Contact Hours**	**4**

Faculty (Names)	**Coordinator(s)**	Parul Arora, Kuldeep Baderia,
	Teacher(s) (Alphabetically)	Joysmita Chatterjee, Kuldeep Baderia, Madhu Jain, Parul Arora, Sajai Vir Singh

COURSE OUTCOMES		COGNITIVE LEVELS
C215.1	Recall the concept of discrete–time sequences, systems and z-transforms.	Remembering(C1)
C215.2	Explain Basics of FIR and IIR filters and multi-rate signal processing	Understanding(C2)
C215.3	Solve DFTs (Discrete Fourier Transform) and FFT (Fast Fourier Transform) of discrete sequences and apply the concepts in DSP applications	Applying (C3)
C215.4	Analyze and realize the digital FIR (Finite Impulse Response), IIR (Infinite Impulse Response) filters and the filters with sampling rate conversion	Analysis (C4)

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 spectrum estimation.	7

	Total number of Lectures	44

Project Based Learning: Student will learn about the implementation of digital filters (FIR and IIR) and using the same for speech and image processing. Students are encouraged to perform the implementation of FIR, IIR using numerical based tools (MATLAB, Scilab, Octave, python) and implement same for image processing and evaluation is done under the assignment section.

Evaluation Criteria

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

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 , DigitalSignal Processing Fundamentals and Applications, Third Edition, Academic Press, 2013
2.	J.G.Proakis& D.G.Manolakis, Digital Signal Processing, Principles, Algorithmsand 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

Course Code	15B17EC473	Semester Even	**Semester** IV **Session** 2023 -2024 **Month from** Jan – June
Course Name	**Digital Signal Processing (DSP) Laboratory**		
Credits	1	Contact Hours	0-0-2

Faculty (Names)	Coordinator(s)	Dr. Joysmita Chatterjee, Dr. Sajai Vir Singh
	Teacher(s) (Alphabetically)	Dr. Vineet Khandelwal, Dr. Kuldeep Baderia, Mr. Ritesh Kumar Sharma, Dr. Madhu Jain, Dr. Parul Arora, Dr. Bajrang Bansal

COURSE OUTCOMES		COGNITIVE LEVELS
C277.1	**Recall** and interpret discrete time signals and systems in time domain and in frequency domain	Remembering [C1]
C277.2	**Illustrate the use of** linear and circular convolution for analyzing the response of linear time invariant system.	Understanding [C2]
C277.3	**Solve** discrete Fourier transform (DFT) using direct method and Fast Fourier transform (FFT) algorithms for spectral analysis of discrete signals.	Applying [C3]
C277.4	**Analyze** the magnitude and phase characteristics of IIR digital filter using bilinear transformation and impulse invariant methods.	Analyzing [C4]
C277.5	**Design** Nth order FIR digital filters using windowing technique and frequency sampling methods.	Creating [C6]

Module No.	Title of the Module	List of Experiments	CO
1.	Introduction to MATLAB	Introduction to MATLAB and its various applications.	C277.1
2.	Discrete-Time Signals	Generation of discrete time and continuous-time signal with different operation on them.	C277.1
3.	LTI Systems	Write your own MATLAB function to implement linear convolution as an operation to analyze discrete time LTI system.	C277.2
4.	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.	C277.3
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.	Circular Convolution	Write your own MATLAB function "mycirconv" to compute circular convolution of two sequences.	C277.2
7.	Fast fourier transform (FFT)	Develop radix-2 butterfly FFT (Decimation in Time) algorithm for the computation of N-point DFT	C277.3
8.	FIR Filter	Write MATLAB program to design digital FIR filter employing windowing technique.	C277.5
9.	IIR Filter	Write MATLAB program to design IIR digital filter for a given specification using bilinear transformation and impulse invariant method	C277.4
10.	IIR Structures	Write MATLAB program for realization of digital IIR filter using direct form-I & II, cascade and parallel method.	C277.4
11.	DFT Properties	Virtual Lab: Study of Transform domain properties and its use.	C277.3
12.	FIR Filter Study	Virtual Lab: Study of FIR filter design using window method.	C277.5
13.	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.	L. Tan, Digital Signal Processing Fundamentals and Applications, Academic Press, 2008.
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, Third Edition, *TMH*, 2006.
4.	L. R. Rabiner, B. Gold, Theory and application of digital signal processing, PHI, 2012
5.	A. Antoniou, Digital Signal Processing: Signals, Systems, and Filters, TMH, 2006

Virtual Lab links:

Expt. 11: http://vlabs.iitkgp.ernet.in/dsp/exp7/index.html
Expt. 12: http://vlabs.iitkgp.ernet.in/dsp/exp8/index.html
Expt. 13: http://vlabs.iitkgp.ernet.in/dsp/exp10/index.html

Course Code	**15B1NHS431**	Semester: EVEN	**Semester IV** Session **2023-24**
			Month: **January 2024 to June 2024**
Course Name	**Introduction to Literature**		
Credits	**3**	**Contact Hours**	**3 (2-1-0)**

Faculty (Names)	Coordinator(s)	Dr. Monali Bhattacharya (Sector 62)
		Dr. Ekta Srivastava (Sector 128)
	Teacher(s) (Alphabetically)	Dr. Ekta Srivastava, Dr. Monali Bhattacharya

COURSE OUTCOMES		COGNITIVE LEVELS
C206-5.1	Understand figurative language to demonstrate communication skills individually and in a group.	CL-2 Understanding
C206-5.2	Develop a critical appreciation of life and society through a close reading of select texts.	CL-3 Applying
C206-5.3	Analyse a literary text thematically and stylistically and examine it as representing different spectrum of life, human behavior and moral consciousness of society.	CL-4 Analysing
C206-5.4	To interpret Literature as reflection of cultural and moral values of life and society.	CL-5 Evaluating

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Introduction to Literature & Genres	Introduction Literary Genres Literary Devices Learning Communication Skills through Literature	5
2.	Poems	On His Blindness: John Milton My Last Duchess: Robert Browning "Hope" is the thing with feathers: Emily Dickinson A Prayer before Birth: Louis MacNeice Goodbye Party for Miss Pushpa T.S.: Nissim Ezekiel	6
3.	Prose & Short Stories	The Spectator Club: Richard Steele Evidence: Isaac Asimov Toba Tek Singh: Saadat Hasan Manto	6
4.	Plays & Drama	Andher Nagari Chaupat Raja: Bhartendu Harishchandra The Characters of Macbeth & Lady Macbeth as Universal Characters. Arms & The Man: G B Shaw	7
5.	Novel	To Sir with Love: E.R. Braithwaite	4
		Total number of Lectures	28

Evaluation Criteria	
Components	**Maximum Marks**
T1	20
T2	20
End Semester Examination	35
TA	25 (Project, Quiz and class participation)
Total	**100**

Project Based Learning:

The students will create a story out of a song in groups and analyse their own creativity applying Freitag's narrative technique, identify literary devices and interpret their work thematically highlighting language, cultural and moral learnings, one would get on reading their story. The created works will be exchanged and peer review will be undertaken and reports will be submitted as Part B of the project.

Recommended Reading material:	
1	John E. Eck, '*Writing with Sweet Clarity*' 1st Edition. Routledge. 2022 https://doi.org/10.4324/9781003167532
2	M.H. Abrams, Geoffrey Harpham '*A Glossary of Literary Terms*', 11th Edition, Cengage Learning, 2014,
3	Mark William Roche, '*Why Literature matters in the 21st Century*', 1st Edition, Yale University Press, 2004.
4	E.R. Braithwaite, '*To Sir With Live*', First Edition, Bodley Head, UK, 1959. Susie Thomas(Ed), "E. R. Braithwaite: 'To Sir, with Love' – 1959", Available at http://www.londonfictions.com
5	Khalid Hasan (Translator), '*Saadat Hasan Maanto : Toba Tek Singh*' Reprint, Penguin Books, India, 2008.
6	G.B Shaw, '*Arms & The Man*', Paperback, 2013 https://onemorelibrary.com/index.php/en/?option=com_djclassifieds&format=raw&view=download&task=download&fid=10428
7	Anon, (a.n.d.). *The Spectator Club. Sir Richard Steele*. 1909-14. Available at: https://www.bartleby.com/27/7.html
8	*All poems online: http://www.poetryfoundation .org*
9	WolfgangClemen, '*Shakespeare's Soliloquies*', First Edition, Routledge, London, 1987.

Detailed syllabus
Lecture-wise Breakup

Subject Code	15B1NHS432		Semester: Even	Semester IV Session 2023-2024 Months: from Jan. to June 2024
Subject Name	INTRODUCTION TO PSYCHOLOGY			
Credits	3		Contact Hours	(2-1-0)
Faculty (Names)	Coordinator(s)	Dr. Badri Bajaj Dr. Shweta Verma		
	Teacher(s) (Alphabetically)	Dr. Badri Bajaj Dr. Shweta Verma		

COURSE OUTCOMES		COGNITIVE LEVELS
C206-6.1	Demonstrate a basic understanding of different perspectives and concepts of psychology	Understanding (Level 2)
C206-6.2	Apply the concepts of psychology in day to day life	Applying (Level 3)
C206-6.3	Examine the different theoretical perspectives and models of psychology	Analyzing (Level 4)
C206-6.4	Develop solutions for problems related to psychology using appropriate tools/models	Creating (Level 6)

Module No.	Subtitle of the Module	Topics in the module	No. of Lectures for the module
1.	Introduction to Psychology	Definition, Nature, and Scope of Psychology; Approaches: Biological, Psychodynamic, Behaviorist, and Cognitive. Methods: Experimental, Observation and Case study; Fields of application.	3
2.	Basic Concepts	Person, Consciousness, Behavior and Experience, Perception and learning	5
3.	Memory	Process of Memory: Encoding, Storage, Retrieval; Stages of Memory: Sensory, Short term and Long term	3
4.	Motivation	Motives: Intrinsic and Extrinsic Frame Work, Theories of Motivation; Techniques of Assessment of Motivations; Frustration and Conflict.	3
5.	Emotions	Concept, Development, Expression, Theories of Emotions.	2
6.	Intelligence	Nature, Theories, Measurement and Approaches - Genetic and Environmental	3
7.	Personality	Nature, Approaches, Determinants and Theories; Techniques of Assessment: Psychometric and Projective Techniques.	5

8.	**Psychology of Adjustment**	Psychological Disorders: Anxiety, Stress, Depression; Psychotherapies.	**4**
		Total:	**28**

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Evaluation Criteria

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Components	Maximum Marks
T1	20
T2	20
End Semester Examination	35
TA	25 (Project, Assignment, Quiz)
Total	**100**

Project based learning: Students in a group will choose a research topic from the syllabi of psychology. Students will cover the following points to prepare project reports: Understanding of concept, related theories and perspectives; describe the relevance of the chosen concept for personal growth; discuss the application of chosen topic for their professional life; elaborate the relevance of the topic at group level and societal level. Discussions on these practical aspects will enhance students' understanding & application of concepts of psychology in day to day life.

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.	R.A. Baron and G. Misra, Psychology, 5th Ed., Pearson, 2015
2.	S. Nolen-Hoeksema, B. L. Fredrickson, G. R. Loftus, and C. Luts, Introduction to Psychology, 16th Ed., Cengage Learning, 2014.
3.	S. K. Ciccarelli, J. N. White and G. E. Meyer, Psychology, Pearson, 6th Ed., 2022.
4.	C. Morgan, R. King, J.Weisz, J. Schopler, Introduction to Psychology, 7th Ed., McGraw Hill Education, 2017.
5.	S. Pandit, Introduction to Psychology, 1st Ed., SAGE Publications; 2022
6.	G. Feist and E. Rosenberg, Psychology: Perspectives and Connections, 5th Ed., McGraw-Hill Education, 2021

Course Code	15B1NHS433	Semester EVEN (specify Odd/Even)	Semester IV Session 2023-2024 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

Course Code	15B1NHS434	Semester: Even	Semester IV Session 2023 -2024
			Month from Jan 2024 to June 2024

Course Name	Principles of Management

Credits	3	Contact Hours	2-1-0

Faculty (Names)	Coordinator(s)	Dr. Aviral Mishra
	Teacher(s) (Alphabetically)	Dr. Aviral Mishra

COURSE OUTCOMES		COGNITIVE LEVELS
C303-1.1	Describe the functions, roles and skills of managers and illustrate how the manager's job is evolving.	Understanding Level (C2)
C303-1.2	Examine the relevance of the political, legal, ethical, economic and cultural environments in global business.	Analyzing Level (C4)
C303-1.3	Evaluate approaches to goal setting, planning and organizing in a variety of circumstances.	Evaluating Level (C5)
C303-1.4	Evaluate contemporary approaches for staffing and leading in an organization.	Evaluating Level (C5)
C303-1.5	Analyze contemporary issues in controlling for measuring organizational performance.	Analyzing Level (C4)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Introduction to Managers and Management	Management an Overview: Introduction, Definition of Management, Role of Management, Functions of Managers, Levels of Management, Management Skills and Organizational Hierarchy, Social and Ethical Responsibilities of Management: Arguments for and against Social Responsibilities of Business, Social Stakeholders, Measuring Social Responsiveness and Managerial Ethics, Omnipotent and Symbolic View, Characteristics and importance of organizational culture, Relevance of political,legal,economic and Cultural environments to global business, Structures and techniques organizations use as they go international .	7
2.	Planning	Nature & Purpose, Steps involved in Planning, Objectives, Setting Objectives, Process of Managing by Objectives, Strategies, Policies & Planning Premises, Competitor Intelligence, Benchmarking, Forecasting, Decision-Making.	5
3.	Organizing	Organizing ,Benefits and Limitations-De-Centralization and Delegation of Authority, Authority versus Power ,Mechanistic Versus Organic Organization ,Common Organizational Designs, Contemporary Organizational Designs and Contingency Factors, The Learning Organization Nature and Purpose, Formal and Informal Organization, Organization Chart, Structure and Process, Departmentalization by difference strategies, Line and Staff authority- Benefits and Limitations-De-Centralization and Delegation of Authority Versus, Staffing ,Human Resource	7

		Inventory, Job Analysis , Job Description, Recruitment and Selection, Selection Tools Staffing, Managerial Effectiveness,Staffing, Training, Employee Performance Management, Compensation and Benefits, Contemporary Issues in Managing Human Resources .	
4.	Directing	Scope, Human Factors, Creativity and Innovation, Harmonizing Objectives, Leadership, Types of Leadership,Directing, Managers as leaders, Early Leadership Theories…Trait Theories, Behavioral Theories, Managerial Grid, Contingency Theories of Leadership,Directing ...Path Goal Theory, contemporary views of Leadership, Cross Cultural Leadership, Leadership Training, Substitutes of Leadership	4
5.	Controlling	Controlling, Introduction to Controlling System and process of Controlling, Requirements for effective control, The planning Contol link, The process of control, types of control The Budget as Control Technique, Information Technology in Controlling, Productivity, Problems and Management, Control of Overall Performance, Direct and Preventive Control, Financial Controls , Tools for measuring organizational Performance ,Contemporary issues in control Workplace concerns, employee theft, employee violence	5
		Total number of Lectures	**28**

Evaluation Criteria

Components	Maximum Marks
T1	20
T2	20
End Semester Examination	35
TA	25 (Project, Attendance)
Total	**100**

Project Based Learning: The project is to be done in group size of 4-5 members each. Student groups can choose an organization from one of the following themes-Staffing and Controlling in a virtual world, Staffing and controlling in the Banking Sector, Staffing and Controlling and the IT industry, Staffing and Controlling in Hospitality/Telecom/Airlines, Staffing and Controlling in Logistics, Staffing and Controlling in International Business and Staffing and Controlling in Consulting. Study the staffing and controlling processes of the chosen organization. Students were asked to submit their research analysis in the form of a project report. This adds to the management related employability skills in an organization as staffing and controlling are important aspects of overall management function.

	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.	Koontz H, Weihrich H. Essentials of management: an international, innovation, and leadership perspective. McGraw-Hill Education; 10th Edition 2018.
2.	Tripathi PC. Principles of management. Tata McGraw-Hill Education; 6th Edition 2017.
3.	Principles of Management Text and Cases, Pravin Durai , Pearson ,2015
4.	Robbins, S.P. & Decenzo, David A. Fundamentals of Management,7th ed., Pearson, 2010
5.	Robbins, S.P. & Coulter, Mary Management; 14 ed.,Pearson , 2009

Course Code	15B1NHS435	**Semester**: Even	**Semester Session**:2023-24
			Month from: Jan-June

Course Name	Financial Accounting

Credits	3	Contact Hours	3 (2-1-0)

Faculty (Names)	**Coordinator(s)**	Dr. Sakshi Varshney (Sec-128) &Dr. Purwa Srivastava (Sec 62)
	Teacher(s) (Alphabetically)	Dr. Purwa Srivastava & Dr. Sakshi Varshney

COURSE OUTCOMES		COGNITIVE LEVELS
C206-8.1	Understand the basic concepts of Accounting.	Understanding level (C2)
C206-8.2	Apply accounting concepts for recording of business transactions.	Applying level (C3)
C206-8.3	Compare and reconcile the accounting records with other sources of information.	Analyzing level (C4)
C206-8.4	Evaluate the accounting records to identify and rectify the errors made during accounting process.	Evaluating level (C5)
C206-8.5	Construct the final accounts and cash flow statement of a business.	Creating (C6)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Introduction to Accounting	Meaning of Accounting, Objectives of Accounting, Understanding Company Management, Stakeholders versus Shareholders, Financial Reporting Standards, Financial Reporting	2
2.	Understanding Accounting Elements	Elements of Financial Statements- Assets, Current assets, Liabilities, Current liabilities, Equity, Income, Expenses, Accounting Equation	2
3.	Accounting Concepts	Business entity concept, Money measurement concept, Going concern, Consistency, Matching concept, Cost concept, Dual aspect concept, Materiality, Full disclosure, Generally Accepted Accounting Principles (GAAP)	2
4.	Journal Transactions	Journal, Rules of Debit and Credit, Compound Journal entry, Opening entry	2
5.	Ledger Posting and Trial Balance	Ledger, Posting, relationship between Journal and Ledger, Rules regarding Posting, Trial balance	3

6.	Rectification of Errors	Different types of errors, their effect on trial balance, rectification and preparation of suspense account	5
7.	Bank Reconciliation Statement	Meaning of Bank Reconciliation Statement, technique of preparing BRS, Causes of difference	2
8.	Final Accounts	Trading account, Profit and Loss account, Balance sheet, Adjustment entries	6
9.	Cash Flow Statement	Introduction of Cash Flow Statement, Classification of Cash inflows and Cash Outflows Activities, Elements of the Cash Flow Statement, Methods of Cash Flow Statement, Limitations Of Cash Flow Statement	4
		Total number of Lectures	**28**

Evaluation Criteria

Components	Maximum Marks
T1	20
T2	20
End Semester Examination	35
TA	25 (Project+ Class test/Quiz+ Class Participation)
Total	**100**

Project Based learning: Students form a group of 4-5 students. Each group is required to choose a company listed in Indian stock exchange and download its latest annual report. Students are required to describe the company, composition of board of directors, number of company's executives, independent directors, and background of independent directors. They are required to find out financing, investing and operating activities and examine the change in total assets, sales and net profit of the company. As per auditor's report, company's position and future plans for growth of the company is also analyzed.

	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.	Maheshwari, S. N., Maheshwari, S.K. Maheshwari, S.K., Financial Accounting, 6th Ed., S. Chand & Sons Publication, 2018.
2.	Narayanswamy, R., Financial Accounting: A Managerial Perspective, 7th Ed., Taxmann Publications, 2017
3.	Tulsian,P., Financial Accounting,2nd Ed., Pearson Education India,2017
4.	Bhattacharya, A., Financial Accounting for Business Managers, 5th Ed., Prentice Hall of India,2016
5.	Weygandt.J., Kimmel, P., Kieso,D., Accounting Principles, 12th Edition, John Wiley & Sons,2015
6.	Barton,M., Bhutta, P.,S. O'Rourke,J.,Satyam Computer Services Ltd: Accounting fraud in India,London,SAGE Publications Ltd, 2017
7.	Lal,J.,Srivastava,S., Financial Accounting : Principles and Practices, 1st Edition., S. Chand & Sons Publication, 2006.

Detailed Syllabus

Course Code	19B12HS412	Semester: Even	Semester IVth Session 2023-24 Month from January to June
Course Name	Industrial Economics		
Credits	03	Contact Hours	2-1-0

Faculty(Names)	Coordinator(s)	Dr. Amba Agarwal, & Dr. Neha Singh	
	Teacher(s) (Alphabetically)	Dr. Amba Agarwal, & Dr. Neha Singh	

COURSE OUTCOMES		COGNITIVE LEVELS
After pursuing the above mentioned course, the students will be able to:		
CO1	Understand the basic framework of Industrial economics.	Understanding level (C2)
CO2	Identify the strategic actions of producers in terms of production and cost in a competitive market structure.	Applying level (C3)
CO3	Examine the Industrial location, productivity, efficiency, industrial profile and environmental preservation.	Analyzing level (C4)
CO4	Analyze the role and types of institutional finance, Regional industrial imbalance & Social Security.	Analyzing level (C4)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Introduction	Introduction of Industrial Economics, Framework & Problems; SCP (Structure-Conduct-Performance) Sellers' concentration; Hrfindahl- Hirschman Index.	3
2.	Industrial Organization and Market Structure	Consumer & Producer Surplus; Economies of scale; Cost conditions, Market structure and profitability; Oligopoly theory versus the SCP paradigm Game theory	5
3.	Industrial location and Industrial Productivity	Factors influencing Industrial location and Weber, Florence and Losch theory of industrial location. Measuring Industrial Productivity and Factors influencing Industrial Productivity.	5
4.	Industrial Efficiency	Factors influencing Industrial efficiency & profitability: Internal & External factors, Rostow Stages of Economic Development and Inter-relationship between Industrial Development and Economic Development.	4
5.	Indian Industrial Growth and Pattern	Classification of industries; Industrial policy in India, Issues in industrial proliferation and environmental preservation; Pollution control policies.	3
6.	Industrial Profile and Problems	Structure and Organization of Large Industries in India. Public & Private Sector Enterprises. MSME Role & Problems.	3
7.	Industrial Finance	Role, nature and types of Institutional Finance for industrial development.	2

8.	Industrial Imbalance & Social Security	Regional Industrial Imbalance: Causes and effects of Industrial Imbalances: Measures adopted by Government to reduce regional imbalance & Social Security system Provided by Government of India for various industries.	3
Total number of Lectures			**28**

Evaluation Criteria

Components	Maximum Marks
T1	20
T2	20
End Semester Examination	35
TA	25(Assignment, Test, Quiz)
Total	**100**

Project based Learning: Each student in a group of 4-5 will opt a topic related to a particular industry and submit a report related to growth, pattern, finance and challenges faced by the specific industries.

	Recommended Reading material:
1.	**Singh,A.andA.N.Sadhu**,IndustrialEconomics,HimalayaPublishingHouse,Bombay,1988
2.	**Barthwal,R.R.**,IndustrialEconomics,WileyEasternLtd.,NewDelhi,1985
3.	**Cherunilam, F**., Industrial Economics: Indian Perspective (3rdEdition),Himalaya Publishing House, Mumbai, 1994
4.	**Ahluwalia,I.J**.,IndustrialGrowthinIndia,OxfordUniversityPress,NewDelhi,1985
5.	**Hay,D. and D.J. Morris**, Industrial Economics : Theory and Evidence, Oxford University Press, New Delhi, 1979
6.	**Kuchhal,S.C.**,IndustrialEconomyofIndia(5thEdition),ChaitanyaPublishingHouse,Allahabad,1980

Course Code	23B12HS211	Semester: Even	Semester IV Session 2023-2024
			Months: from Jan. to June 2024
Course Name	**Introduction to Political Science**		
Credits	3 (2-1-0)	Contact Hours	3

Faculty (Names)	**Coordinator(s)**	**Dr. Namreeta Kumari**
	Teacher(s)	**Dr. Namreeta Kumari**

COURSE OUTCOMES		COGNITIVE LEVELS
C206-9.1	Demonstrate an understanding concept of Political Science.	Understand (Level 2)
C206-9.2	Assess the different political ideologies.	Evaluate (Level 5)
C206-9.3	Assess the concept of state and different theories of state.	Evaluate (Level 5)
C206-9.4	Demonstrate an understanding of democracy and models of democracy	Understand (Level 2

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Understanding Political Science	- Evolution - Nature and Scope - Is Political Science a Science?- Political Science as an art, Political Science as a Science - Importance of Studying Political Science	6
2.	Analyzing the Ideological Discourse	- Liberalism: Individualism, Justice, Equality, & Reason - Conservativism: Authoritarian Conservatism, Paternalistic Conservatism, Libertarian Conservatism - Socialism: Classical Marxism, Orthodox Communism, Ethical Socialism, Revisionist Socialism, Neo revisionism & the third way - Anarchism: Collectivist Anarchism, Induvial Anarchism, Anarcho-Capitalism. - Nationalism: Liberal nationalism, Conservative Nationalism Expansionist	8

		Nationalism, Anti Colonial post-colonial nationalism. ● Feminism: Redefining Political, Waves of Feminism, Strands of Feminism ● Multiculturalism: Politics of Recognition, Liberal multiculturalism, Pluralist Multiculturalism, Cosmopolitan Multiculturalism, Critiques of Multiculturalism	
3.	State	● What is State: Idea of state ● Theories of State: Evolutionary theory of state, Marxist theory of state, Liberal Theory of State ● Role of State	8
4.	Democracy	● Defining Democracy ● Models of Democracy- David Held's Model ● Rival Theories of Democracy	6
Total number of Lectures			**28**

Evaluation Criteria

Components	Maximum Marks
T1	20
T2	20
T3	35
TA	25 (Attendance, Quiz, Project)
Total	**100**

Project Based learning: Each student would form a group of 3-4 students and to make projects on issues related with Indian Political System. The project will facilitate students to comprehend the everyday politics of the country.

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. Heywood, Political Ideologies: An Introduction, New York: Palgrave Macmillan, 2017.
2.	D. Held, Models of Democracy, Stanford: Standford University Press, 2006
3.	B. O'Leary and P. Dunleavy, Theories of the State: The Politics of Liberal Democracy, London: Macmillan Education Ltd., 1987.
4.	S. De. Beauviour, Second Sex, NewYork: Vintage Books, 1949
5.	A Y. Davis, Abolition Democracy: Beyond Empire, Prisons, and Torture, New York : Seven Stories Press. 2005

Subject Code	24B12HS211	Semester: Even	Semester: IV Session: 2023-24 Month: Jan 2024 to June 2024
Subject Name	Media, Culture and Society		
Credits	3	Contact Hours	(2-1-0)

Faculty (Names)	Coordinator(s)	Dr Nibha Sinha
	Teacher(s) (Alphabetically)	Dr Nibha Sinha

CO Code	COURSE OUTCOMES	COGNITIVE LEVELS
C206-10.1	Understanding of basic concepts, theories and methods to critically evaluate and adjudge the role of media and social media to shape contemporary culture and society	Understanding Level-(C2)
C206-10.2	Analyzing the importance of media strategy and media literacy in social transformation	Analyzing Level-(C4)
C206-10.3	Analysis of New Media emergence, production, convergence and its challenges	Analyzing Level-(C4)
C206-10.4	Critical evaluation of media content, and the ways in which media is used by state and non- state actors in social life, cultural production, politics, and governance.	Evaluating Level-(C5)
C206-10.5	Creating constructive and analytical approach towards Social, cultural and political prospects of media	Creating Level- (C6)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Introduction	Orientation of the Course	1
2.	Introduction to Media Studies: Basic Theories and Concepts	Theorizing Media, Culture and Society; Identity and Culture, Media and the changing of Social Character, representation and emergence of consumerism and media cultures.	6
3	Mass Media and Development Communication	Gender, Race and Ethnicity, Media Literacy and Development, Media and Social Change, Communication Strategies for Development, influence of media on attitudes and behaviors, media impact on social transformations.	6
4.	Media in/as social worlds: Challenges	Emergence of New media, and its production: (ownership patterns and control, advertising), Convergence, social media: social significance and challenges	5
5	Visual Media: Images and Implications	Semiotics and Visual Analysis, Advertising and Visual Persuasion, Visual Storytelling in Film and Television and its impact, Myths and stereotypes in Media Representation, Power of Images in Shaping Public Opinion	6
6	Media and State, democracy and the publics	Mediated Politics: Opinion political campaigns and polls, Media as public sphere: virtual citizenship, Deconstructing Orientalism in Media.	4

	Total number of Lectures	28

Evaluation Criteria

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

	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.	Paul Dodkinson, Media, Culture and Society: An Introduction, Sage, 2016.
2.	Douglas Kellner, Media Culture: Cultural Studies, Identity and Politics between the modern and the Post Modern, 2016
3.	Stig Hjarvard, The Mediatization of Culture and Society, Routledge, 2013
4.	Tonny Bennett, James Curran, Michael Gurevitch, Janet Wollacott, Culture, Society and The Media, Routledge, 1982

Course Code	24B11CS242	Semester: EVEN	Semester IV Session 2023-2024 Month from Jan to Jun
Course Name	Artificial Intelligence and Machine Learning: Theory & Practice		
Credits	2	Contact Hours	2-0-0
NBA Code	212		

Faculty (Names)	Coordinator(s)	Dr. Deepika Varshney& Dr. Mukesh Saraswat
	Teacher(s) (Alphabetically)	Deepika Varshney, Mukesh Saraswat

COURSE OUTCOMES		COGNITIVE LEVELS
C212.1	Understand the basics of artificial intelligence, problem solving strategies, and machine learning methods	Understand (Level 2)
C212.2	Apply intelligent searching techniques and learning algorithms to solve a given problem	Apply (Level 3)
C212.3	Analyze the different models of learning and classification algorithm.	Analyze (Level 4)
C212.4	Assess the suitability of algorithms in different application scenarios.	Evaluate (Level 5)
C212.5	Implement searching and learning algorithms for solving real world problems	Create (Level 6)

Module No.	Title of Module	Topics in the Module	No. of Lectures
1.	Fundamentals of AI	Introduction to AI, Problems of AI, AI technique, Tic – Tac – Toe Problem. Intelligent Agents, Agents &Environment, Nature of Environment, Structure of Agents, Goal-based agents, Utility-based agents, Learning agents.	4
2.	Search Techniques	Problem solving agents, searching for solutions; uniform search strategies: breadth first search, depth first search. Heuristic search strategies Greedy best - first search, A* search, AO* search.	6
3.	Introduction to Machine learning	Fundamentals of Machine learning, Types of Machine Learning: Supervised, unsupervised, reinforcement, Machine perception - feature extraction - classification, clustering, linear and logistic regression.	6

4.	**Classification Algorithms**	Concept of ANN (Artificial Neural Network): Perceptron and backpropagation neural network - k-nearest neighbor rule. Support vector machine: Decision trees: and random forest.	6
5.	**Deep Neural Network**	Introduction to Deep learning, Convolutional neural networks, CNN Architectures LeNet, AlexNet, GooleNet, VGG Net, ResNet: Comparative analysis	6

Total number of Lectures	**28**

Project based learning: Each student in a group of 3-4 has to work on a mini-project, in which they will identify a real-life problem and develop the solution by utilizing skills learned throughout the course. The project implementation should be in python or R preferably along with well documentation on different aspects of the software. This enhances the understanding of students towards different concepts of data analytics and also helps them during their employability as data engineer or data analyst.

Evaluation Criteria
Components Maximum Marks
T1   20
T2   20
End Term   35
TA   25 (**Attendance (10), Assignment (5), Mini-Project (10)**))
Total   100

RecommendedReadingmaterial: Author(s),Title,Edition,Publisher,YearofPublicationetc.(Textbooks,Reference Books,Journals,Reports,Websites etc.intheIEEE format)

Textbook(s)

1.	R. O. Duda, E. Hart, and D.G. Stork, "Pattern Classification", Second Edition, John Wiley & Sons, Singapore, 2012.
2.	Francois Chollet, "Deep Learning with Python", Manning Publications, Shelter Island, New York, 2018
3.	Satish Kumar, "Neural Networks A Classroom Approach", McGraw Hill Education (India) Pvt. Ltd, 2010
4.	S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third Edition, 2015.
5.	Nils J. Nilsson, "Artificial Intelligence: A New Synthesis", 1st Edition, Morgan-Kaufmann, 1998

Reference Books

1.	EthemAlpaydin, "Introduction to Machine Learning", 3rd Edition, MIT Press, 2014.
2.	C. M. Bishop, "Pattern Recognition and Machine Learning", Springer, 2006.
3.	Kevin P. Murphy, "Machine Learning: A Probabilistic Perspective", MIT Press, 2012
4.	Elaine Rich, Kevin Knight, &Shivashankar B Nair, "Artificial Intelligence", McGraw Hill, 3rd ed.,2017.
5.	Patterson, "Introduction to Artificial Intelligence & Expert Systems", Pearson, 1st ed. 2015.

Detailed Syllabus

Course Code	24B15CS244	Semester: Even	Semester: IV Session 2023 -2024
			Month from January to June
Course Name	Artificial Intelligence and Machine Learning workshop		
Credits	01	Contact Hours	0- 0 - 2
NBA Code	276		

Faculty (Names)	Coordinator(s)	Dr. Deepika Varshney & Dr. Mukesh Saraswat
	Teacher(s) (Alphabetically)	Dr. Deepika Varshney & Dr. Mukesh Saraswat

COURSE OUTCOMES At the completion of the course, Students will be able to		COGNITIVE LEVELS
C276.1	Understanding the basic syntax used for data manipulation in Python.	Understand (Level 2)
C276.2	Apply different python libraries for AI and Machine Learning applications.	Apply (Level 3)
C276.3	Analyze the real world applications related to AI and Machine learning	Analyze (Level 4)
C276.4	Analyze the performance of Machine learning algorithms using python	Analyze l(Level 4)
C276.5	Create a model to solve a real-world problem of classification or clustering.	Create (Level 6)

Module No.	Title of the Module	Topics in the Module	No. of Labs (2H) for the module
1.	Python fundamentals	Data Types, Basic programming, Conditional Statements, List, Tuples, Sets, Dictionary, Loops, String Manipulation, Functions, Strings	3
2.	Python Libraries	Python Libraries: Array and matrix processing using Numpy, Data Analysis using Pandas, Image manipulation using Scipy, Deep learning implementation using TensorFlow, Designing Neural Network using Keras, Matplotlib	5
3.	Machine Learning using Python	Data preparation, creating training and testing sets, building a model, Model evaluation, Supervised learning: Decision trees, Linear regression, Logistic regression, SVM, Random Forest, ANN. Unsupervised learning: k-means clustering	4

4.	Mini Project	1.Identify the broad topic of your mini project based on the AI&ML. 2. Study minimum 8 quality research papers based on the selected topic. 3. Identify the research problem. 4. Design the architecture for the proposed problem. 5. Implement and propose your novelty/improvement in terms of algorithm/new feature. 6. Perform the experimental analysis (in Python language only).	**2**
			14

Evaluation Criteria

Components	**Maximum Marks**
Lab Test 1	20
Lab Test 2	20
	D2D 60 (Evaluation 1 (10), Evaluation 2(10), Mini Project (15), Assignment (15), Attendance (10))
Total	**100**

Project Based Learning: Each student in a group of 3-4 has to work on a mini-project, in which they will identify a real-life problem and develop the solution by utilizing skills learned throughout the course. Each group will evaluate the performance of the models applied and present the interpretation of the results. The project will be done in Python.

RecommendedReadingmaterial:Author(s),Title,Edition,Publisher,YearofPublicationetc.(Textbooks,Reference Books,Journals,Reports,Websites etc.intheIEEE format)

TextBook(s)

1.	R. O. Duda, E. Hart, and D.G. Stork, "Pattern Classification", Second Edition, John Wiley & Sons, Singapore, 2012.
2.	Francois Chollet, "Deep Learning with Python", Manning Publications, Shelter Island, New York, 2018
3.	Satish Kumar, "Neural Networks A Classroom Approach", McGraw Hill Education (India) Pvt. Ltd, 2010
4.	S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third Edition, 2015.
5.	Nils J. Nilsson, "Artificial Intelligence: A New Synthesis", 1st Edition, Morgan-Kaufmann, 1998

References

1.	EthemAlpaydin, "Introduction to Machine Learning", 3rd Edition, MIT Press, 2014.
2.	C. M. Bishop, "Pattern Recognition and Machine Learning", Springer, 2006.
3.	Kevin P. Murphy, "Machine Learning: A Probabilistic Perspective", MIT Press, 2012

Course Code	16B1NHS431	Semester **Even** (specify Odd/Even)	Semester **IV** Session **2023-24** Month from **Jan-June**
Course Name	HUMAN RESOURCE MANAGEMENT		
Credits	3	**Contact Hours**	(LTP: 2-1-0)

Faculty (Names)	**Coordinator(s)**	Dr. Praveen Kumar Sharma
	Teacher(s) (Alphabetically)	Dr. Praveen Kumar Sharma

Revised-COURSE OUTCOMES		COGNITIVE LEVELS
C206-1.1	Demonstrate a basic understanding of different functions of human resource management: Employer Selection, Training and Learning, Performance Appraisal and Remuneration, Human Relations and Industrial Relations.	Understand Level (C2)
C206-1.2	Apply various tools and techniques in making sound human resource decisions.	Apply level (C3)
C206-1.3	Determine the impact of technology and the market on industrial relations.	Apply level (C3)
C206-1.4	Analyze the key issues related to administering the human resource management activities such as recruitment, selection, training, development, performance appraisal, compensation and industrial relation.	Analyze Level (C4)
C206-1.5	Critically assess and evaluate different human resource & industrial relation practices and techniques and recommend solutions to be followed by the organization	Evaluate Level (C5)

Module No.	Title of the Module	Topics in the Module	No. of Lectures for the module
1.	Introduction	Introduction to Human Resource Management and its definition, HRM functions and its relation to other managerial functions, Nature, Scope and Importance of Human Resource Management in Industry, Role & position of Personnel function in the organization. Human Resource Planning	3
2.	Employer Selection	Recruitment Process; Selection Process - Job and Worker Analyses, Matching Job with the Person; Selection Methods - Application Blank, Biographical Inventories, References and Recommendation Letters, Interviews	8
3.	Training and Learning	Need Identification; Psychological Factors in Learning; Training Methods in the Workplace; Effective Training Programme	6

4.	Performance Appraisal and Remuneration	Different methods of Performance Appraisal, Basic concepts in wage administration, company's wage policy, Job Evaluation, Issues in wage administration, Bonus & Incentives	6
5.	Human Relations and Industrial Relations, Trends in Human Resource Management	Factors influencing industrial relations - State Interventions and Legal Framework - Role of Trade unions - Collective Bargaining - Workers' participation in management. Trends in Human Resource Management: Analytics, Artificial Intelligence	5
		Total number of Lectures	**28**

Evaluation Criteria

Components	Maximum Marks
T1	20
T2	20
End Semester Examination	35
TA	25(Project, assignment, class participation, attendance)
Total	**100**

Project-based learning: Each student in a group 4 to 5 will select a company which is registered in India.
To make subject application based, the student will analyze Human Resource management policies and employed performing different functions at various levels related to recruitment, training, development, performance appraisal and compensation.

	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.	G. Dessler and B. Varrkey, *Human Resource Management, 15e*. Pearson Education India, 2005.
2.	V. S. P. Rao and V. H. Krishna, *Management: Text and cases*. Excel Books India, 2009.
3.	K. Aswathappa, *Human resource management: Text and cases*. Tata McGraw-Hill Education, 2013.
4.	P. M. Noe, R. A., Hollenbeck, J. R., Gerhart, B. A., & Wright, *Fundamentals of Human Resource Management*. Tata McGraw-Hill Education, 2019.
5.	B. Pattanayak, "Human Resource Management, PHI Learning Pvt," *Ltd., New Delhi*, vol. 2, 2018.
6.	D. A. DeCenzo, S. P. Robbins, and S. L. Verhulst, *Fundamentals of human resource management*. John Wiley & Sons, 2016.