

Booklet of Common Courses Offered by USS

Guru Gobind Singh Indraprastha University



IPU

GURU GOBIND SINGH
INDRAPRASTHA
UNIVERSITY
NEW DELHI

Common Courses (MDC/IDC, SEC, AEC and
VAC) Scheme and Syllabus
(Third Semester)

Content

S.No	Details	Page Range
1.	Outline of the Document	4-6
2.	Multi-Disciplinary Courses (MDC)	8-23
	<ul style="list-style-type: none">• Popular Culture• Human Rights• Society and Humour• Popular Fiction• Stock Market and Investment Planning• Introduction to Corporate• Social Responsibility• Discrete Mathematics• Mathematical Data Science• Bio Statistics• R-SHINY WEB APP• NONLINEAR DYNAMICS	
3.	Skill Enhancement Courses (SEC)	22-42
	<ul style="list-style-type: none">• Indian Heritage and Culture• Ethics and Dilemmas in Politics• Conceptualizing Everyday Life• Translation: Theory and Practice• Content Writing for Media• Data Analysis with 'R'• Sustainable Development• The Story of Science• Excel I• Latex I• Scientific Writing• Maple• Fractal Geometry	

4. Ability Enhancement Courses **43-54**

- Travel Accounts
- Public Opinion and Surveys
- Introduction to Social Work
- English Language and Grammar – III
- French III
- German III
- Hindi Language

5. Value-Added Courses **55-57**

- Universal Human Values: Understanding Harmony

SEMESTER III

Multi-Disciplinary Courses (MDC) *

S. No.	Course Code	Course Title	Offered By	Credit	Mode Of Examination
1.	BALA 213	Popular Culture	USLA	3	UES
2.	BALA 215	Human Rights	USLA	3	UES
3.	BALA 217	Society and Humour	USLA	3	UES
4.	BAENG211	Popular Fiction	USHSS	3	UES
5.	BAECO213	Stock Market and Investment Planning	USHSS	3	UES
6.	BSCES-207	Introduction to Corporate Social Responsibility	USEM	3	
7.	BSID 101	Discrete Mathematics	USBAS		
8.	BSID201	Mathematical Data Science	USBAS		
9.	BSID301	Bio Statistics	USBAS		
10.	BSID401	R-SHINY WEB APP	USBAS		
11.	BSID501	NONLINEAR DYNAMICS	USBAS		
12.	CT-209	Introduction to Fuel Technology	USCT		

***Student will be required to opt for MDC Courses out of their respective Schools**

Skill Enhancement Courses

S. No.	Course Code	Course Title	Offered By	Credit	Mode Of Examination
1.	BALA 219	Indian Heritage and Culture	USLA	3	UES

2.	BALA 221	Ethics and Dilemmas in Politics	USLA	3	UES
3.	BALA 223	Conceptualizing Everyday Life	USLA	3	UES
4.	BAENG213	Translation: Theory and Practice	USHSS	3	
5.	BAENG229	Content Writing for Media	USHSS	3	
6.	BAECO215	Data Analysis with 'R'	USHSS	3	
7.	BSCEC-209 (SEC-3)	Sustainable Development	USEM		
8.	BSEC131	The Story of Science	USBAS	3	
9.	BSSEC101	Excel I	USBAS	3	
10.	BSSEC201	Latex I	USBAS	3	
11.	BSSEC301	Scientific Writing	USBAS	3	
12.	BSSEC401	Maple	USBAS	3	
13.	BSSEC501	Fractal Geometry	USBAS	3	

Ability-Enhancement Courses (AEC)

S. No.	Course Code	Course Title	Offered By	Credit	Mode Of Examination
1.	BALA 225	Travel Accounts	USLA	2	NUES
2.	BALA 227	Public Opinion and Surveys	USLA	2	NUES
3.	BALA 229	Introduction to Social Work	USLA	2	NUES
4.	BAENG215	English Language and Grammar – III	USHSS	2	UES
5.	BAENG219	French III	USHSS	2	UES
6.	BAENG221	German III	USHSS	2	UES
7.	BSCES–213	Hindi Language	USEM		

Value Added Courses (VAC)

S. No.	Course Code	Course Title	Offered By	Credit	Mode Of Examination
1.	UHV– 201 (VAC)	Universal Human Values: Understanding Harmony	USEM	2	

Detailed Syllabus

Semester III

Multi-Disciplinary Courses (MDC)/ Interdisciplinary Course (IDC)

University School of Liberal Arts (USLA)

Popular Culture

Nature of the Course: MDC

Course Code: BALA 103

Semester: Third (III)

Credits: 3 (L2:T1)

Mode of Examination: UES

Course ID:

Marks: 100 (40+60)

Internal Evaluation: 40

External Evaluation: 60

Course Objective

This course will introduce students to the idea of 'popular culture'. Popular culture as a phenomenon is associated with modernity, the Industrial Revolution, and leisure time. This paper introduces students to the historicity of popular culture, and the different ways of conceptualizing said culture. It then moves towards case studies of popular culture on a global and national level. Specific examples include cinema, sports, print, and music culture.

Course Outcome

CO1 (Knowledge): Learn about the idea of 'popular culture', and its different aspects

CO2 (Understanding): Understand the historicity of popular culture

CO3 (Synthesis): The various theoretical paradigms to conceptualize popular culture, and the methodological issues in the study of popular culture

CO4 (Application): Focus on specific aspects of popular culture (theatre, dance, food, cinema, etc.); field visit and report about it

Course Content

Unit-I: Popular Culture

- a. Defining popular culture: folk culture, mass culture, difference from elite culture.
- b. History of popular culture in different cultural contexts: Europe and India.
- c. Theories of Popular Culture – Frankfurt School, Antonio Gramsci, Walter Benjamin, Structuralism, Raymond Williams, Stuart Hall and Pierre Bourdieu.

Unit-II: Popular Culture in Global Context

- a. Mass culture and global capitalism
- b. Cinema – Hollywood, national cinemas (case studies of a specific genre or theme)
- c. Sports – a case study of football

Unit-III: Popular Culture in India

- a. Cinema – as counterculture to colonialism, historical-cultural shifts, social concerns, etc.

- b. Advertising – from dirigiste to neoliberal times
- c. Cricket – appropriation of a colonial sport

Unit-IV: Print Culture and Music Industry

- a. Emergence of print culture in colonial India; Urdu and Hindi print cultures in Delhi and Benares in the nineteenth centuries; nationalist concerns in the twentieth century
- b. Gita Press Gorakhpur – a case study
- c. Cassette culture to YouTube – the story of a transition

Pedagogy

- Classroom lectures and assignments
- Creative exploration of popular culture – screening of films, music videos, etc.

Text Books

1. Storey, John, *Cultural Theory and Popular Culture: An Introduction*, Routledge, 2021.
2. Burke, Peter, “The ‘Discovery of Popular Culture.’” *People's History and Socialist Theory*, ed. Raphael Samuel: 216, 2016.
3. Hall, Stuart, “Popular Culture, Politics and History”, *Cultural Studies* 32, no. 6 (2018): 929-952, 2018.
4. Hobsbawm, Eric, *Fractured Times: Culture and Society in the Twentieth Century*, The New Press, 2014.

Recommended Readings

1. Guha, R, ‘Cricket and Politics in Colonial India’, *Past & Present*, (161), 155-190. 1998.
2. Nandy, A., *The Tao of Cricket: On Games of Destiny and the Destiny of Games*, Oxford University Press, 2000.
3. Orsini, Francesca, *Before the Divide: Hindi and Urdu Literary Culture*, Orient Blackswan. 2011.
4. Mukul, A, *Gita Press and the Making of Hindu India*, HarperCollins, 2015.
5. Miller, T. (ed.), *The Routledge Companion to Global Popular Culture*, Routledge, 2014.
6. Cook, Pam (ed.), *The Cinema Book*, British Film Institute, 2007.
7. Baker, W. J., “The Making of a Working-class Football Culture in Victorian England”. *Journal of Social History*, 13(2), 241-251. 1979.
8. Purohit, Kunal, *H-Pop, The Secretive World of Hindutva Pop Stars*, HarperCollins, 2023.
9. Manuel, Peter, *Cassette Culture: Popular Music and Technology in North India*, University of Chicago

Human Rights

Nature of Course: IDC
Course Code: BALA 215
Semester: Third (III)
Credits: 3 (L2 T1)

Mode of Examination: UES
Course ID:
Marks: 100 (40+60)
Internal Evaluation: 40
External Evaluation: 60

Course Objective

This course aims to introduce the concept of human rights, respect or human life and dignity. It will train students on the different international institutional and legal mechanisms overlooking the preservation of human rights.

Course Outcome

CO1 (Knowledge): The students will have the ability to understand and conceptualise human rights, the different types of human rights in international politics.

CO2 (Understanding): The students will have a foundational understanding of human rights and the different safeguards at the international and regional level.

CO3 (Synthesis): The students will be familiarised with the empirical and analytical tools to understand the various international legal mechanisms and the institutions and the ways in which they prescribe measures to safeguard human rights.

CO4 (Application): The students will be trained with the knowledge of various international and regional mechanisms that promote and seek to safeguard human rights.

Course Content

Unit I: Human Rights: Historical Foundation and Conceptualisation

- a. Philosophical and Historical Foundation of Human rights
- b. Three Generations of Rights
- c. The Concept of Human Rights
- d. Rule of Law and Human Rights

Unit II: Evolution of Human Rights in the UN System

- a. UN Charter and the development of human rights Provisions of the Charter
- b. Universal Declaration of Human Rights, 1948
- c. International Covenant on Civil and Political Rights 1966 and International Covenant on Economic, Social and Cultural Rights 1966.
- d. UN System and Human Rights

Unit III: Promoting Human Rights: Actors and Institutions

- a. UN bodies and promotion of Human Rights: Actor, Institutions and Commissions for Vulnerable groups- Women, Child, Disabled and Minorities
- b. UN and Various Agencies: Intergovernmental (IGOs) and Non-Governmental Organizations (INGOs)

Unit IV: Regional Protection of Human Right: Instruments and Mechanisms

- a. European Convention on the Protection of Human Rights 1950 and institutions
- b. Latin American standards and mechanisms for protection of human rights
- c. African standards and mechanisms for protection of human rights
- d. ASEAN Declaration of Human Rights

Pedagogy

- Lectures
- Classroom discussion/Interaction
- Project and Assignment
- Documentary/ Movies
- Minor Test

Text Books

1. Aggarwal, H.O. A Concise Book on International Law and Human Rights. 2023.
2. "Human Rights: A Basic Handbook for UN Staffs." Available at:<https://www.ohchr.org/sites/default/files/Documents/Publications/HRhandbooken.pdf>.
3. Shelton, Dinah (ed.). The Oxford Handbook of International Human Rights Law. 2013.
4. Sinha, Manoj Kumar. Handbook of Legal Instruments on International Human Rights and Refugee Laws. 2014.

Recommended Readings

1. Alston, Phillip (ed.). The United Nations and Human Rights: A Critical Appraisal. Oxford: Clarendon Press, 1992.
2. Brysk, Alison (ed.). Globalization and Human Rights. Berkeley: University of California Press, 2005.
3. Donnelly, Jack. Universal Human Rights in Theory and Practice. New Delhi: Manas Publication, 2005.
4. "Human Rights and Globalization: Is the Shrinking World Expanding Rights?" by Zehra F. Kabasakal Arat. Human Rights & Human Welfare 5, no. 1 (2005). Available at:<https://digitalcommons.du.edu/hrhw/vol5/iss1/30>.
5. Kumar, Vijay. Human Rights Dimensions and Issues. New Delhi: Anmol Publications, 2003.
6. Nickel, James. Making Sense of Human Rights. 2nd ed. Oxford: Blackwell, 2007.
7. Raphdel, D.D. Political Theory and the Rights of Man. London: Macmillan, 1967.
8. Silverburg, Sanford R. International Law: Contemporary Issues and Future Developments. Oxford: OUP, Clarendon, 2007.

9. "International Covenant on Civil and Political Rights" (ICCPR) by the United Nations (1966). Available at:<https://www.ohchr.org/sites/default/files/Documents/ProfessionalInterest/ccpr.pdf>.
10. "International Covenant on Economic, Social and Cultural Rights" (ICESCR) by the United Nations (1966). Available at:<https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-economic-social-and-cultural-rights>.
11. "Universal Declaration of Human Rights" (UDHR) by the United Nations. Available at:<https://www.un.org/en/about-us/universal-declaration-of-human-rights>.

Society and Humour

Nature of the Course: IDC
Semester: Third (III)
Course Code: BALA 217
Credits: 3 (L2 T1)

Mode of Examination: UES
Course ID:
Marks: 100 (40+60)
Internal Evaluation: 40
External Evaluation: 60

Course Objective

This interdisciplinary course delves into the intricate relationship between society and humor, examining how laughter shapes and reflects various aspects of human interaction, culture, and identity. Through theoretical exploration, case studies, and practical exercises, students will gain insights into the role of humor in shaping social norms, power dynamics, and collective identities. The course aims to foster critical thinking and sociological understanding, enabling students to appreciate the multifaceted nature of humor within different social contexts.

Course Outcome

After completing this course, Students will be able to:

CO1 (Knowledge): Acquire a comprehensive understanding of the multifaceted nature of humor in society, including its philosophical foundations, various forms, and cultural manifestations.

CO2 (Understanding): Interpret and analyze how humor functions as a mechanism for social critique, resistance, and identity expression within diverse cultural and political landscapes

CO3 (Synthesis): Synthesize knowledge from different disciplinary perspectives to critically evaluate the complex relationship between humor, culture, and society.

CO4 (Application): Apply theoretical frameworks and analytical tools to analyze real-world examples of humour in literature, popular culture, and digital media, with a focus on the Indian context.

Course Content

Unit I: Unboxing the concept: Making Fun and Laughter

- a. Philosophy of Humour
- b. Varieties of Humour: Jokes, Slapstick, Deadpan, Satire, Roast, Dark Humour, etc.
- c. Styles of Humour: Affiliative, Self -Enhancing, Self-defeating, Aggressive
- d. Theories (and functions) of Humour

Unit II: Humour, Culture, and Identity

- a. Humour in Literature
- b. Cross Cultural Perspectives on Humour
- c. Humour and Identity
- d. Humour in the digital age: Memes, reels, GIFs, etc in Internet culture

Unit III: Humour, Power, and Social Hierarchies

- a. Subversive Humour: Speaking Truth to Power
- b. Disparaging Humour: "It's [Not] just a Joke!"
- c. Ethics of Humour
- d. Humour in social movements and collective action

Unit IV: Humour in the Indian Context

- a. Tradition of Humour in India
- b. Humour in Literature (Stories of Harishankar Parsai and Premchand)
- c. Humour in Cinema, Standup comedies, Sitcoms and plays

Pedagogy

- Lectures
- Discussion and Presentation
- Project work
- Documentaries/Films/Plays

Text Books

1. Billig, Michael. 2005. *Laughter and Ridicule: Towards a Social Critique of Humour*. Sage. London
2. Siegel, Lee. 1989. *Laughing Matters: Comic Tradition in India*. Motilal Banarsidas. Delhi
3. Goldstein, Jeffrey H; McGhee, Paul E. 1983. *Handbook of Humor Research: Vol. 2*. Springer-Verlag. New York
4. Peter L. Berger. 1997. *Redeeming Laughter: The Comic Dimension of Human Experience*. Penguin. Berlin.

Recommended Readings

1. Meyer, J. C. 2000. *Humor as a Double-Edged Sword: Four Functions of Humor in Communication*. *Communication Theory*, 10(3), 310–331
2. Morreall, John, "Philosophy of Humor", *The Stanford Encyclopaedia of Philosophy* (2023 Edition), Edward N. Zalta & Uri Nodelman (eds.).
<https://plato.stanford.edu/archives/sum2023/entries/humor/>
3. Dadlez, E.M. 2011. 'Truly Funny: Humour, Irony, and Satire as Moral Criticism'. *The Journal of Aesthetic Education* Vol. 45, No. 1. pp. 1-17.
4. Zekavat, Massih. 2017. *Satire, Humor and the Construction of Identities*. John Benjamins Publishing Company. Philadelphia
5. Triesenberg, Katrina E. "Humor in Literature" in Raskin, Victor (Eds.). 2008. *The Primer of Humor Research*. De Gruyter. Berlin.
6. Mintz, Lawrence E. "Humor and popular culture" in Raskin, Victor (Eds.). 2008. *The Primer of Humor Research*. De Gruyter. Berlin.
7. Harshvardhan, Vignesh; Wilson D, David; Kumar, Mallika Vijaya. 2019. "Humour Discourse in Internet Memes: An Aid in ESL Classrooms" In *Asia Pacific Media Educator* 29(1) 41–53
8. Speier, Hans. 1998. "Wit and Politics: An Essay on Laughter and Power". *American Journal of Sociology* Vol. 103, No. 5. pp. 1352-1401

9. Goldstein, Jeffrey H; McGhee, Paul E. 1983. Handbook of Humor Research: Vol. 1. Springer-Verlag. New York. (Chapter, 5)
10. Mintz, Lawrence E. 1985. Stand-up Comedy as Social and Cultural Mediation. American Quarterly Vol. 37, No. 1. pp. 71-80.
11. Koziski, Stephanie. 1984. 'The Standup Comedian as Anthropologist: Intentional Culture Critic'. The Journal of Popular Culture. Volume18, Issue 2. pp 57-76
12. Shivaprasad, Madhavi. 2023. "Mediatisation, digital spaces, and live performance: Understanding Indian stand-up comedy and evolving performance landscapes". In Convergence: The International Journal of Research into New Media Technologies. Volume 29, Issue 6.

University School of Humanities and Social Sciences (USHSS)

Interdisciplinary Course Popular Fiction

Nature of the Course: IDC
Course Title: Popular Fiction
Course Code: BAENG211
Credits: 3 (L2, T1)

Mode of Exam: UES

Total Marks: 100 (40 + 60)

Course Objectives:

To introduce students to popular culture, different forms of popular fiction, and theoretical discourses, debates surrounding popular fiction and their relevance in society.

Course Outcomes: After the completion of the course, students will

CO1 (Knowledge): know about different genre of popular fiction and their form;

CO2 (Understanding): understand the relationship between popular fiction and society and relevance of popular fiction in the society;

CO3 (Communication): be able to discuss popular fiction in relation to society and history;

CO4 (Research): understand popular fiction and cultural studies better, which would help them explore new areas of research.

Course Content:

Unit- I: **Arthur Conan Doyle:** *Sherlock Holmes - The Hound of the Baskervilles*

Unit-II: **J K Rowling:** *Harry Potter*

Unit-III: **Nicholas Spark:** *The Note Book*

Unit- IV: **Agatha Christie:** *Murder on the Orient Express*

Recommended Readings:

1. Ashley, Bob. *The Study of Popular Fiction*. University of Pennsylvania Press, 1989.
2. Srivastava, Prem Kumari and Mona Sinha. *Indian Popular Fiction: New Genres, Novel Spaces*. Routledge, India.
3. Fiske, John. *Understanding Popular Culture*. Routledge, 2010.
4. Glover, David and Scott McCracken, eds. *The Cambridge Companion to Popular Fiction*. Cambridge UP, 2012.
5. Nash, Walter. *Language in Popular Culture*. Routledge, 2021.

Examination Scheme:

1. There will be **five** questions in total with internal choice. Each question will carry **12** marks.
2. Question no. 1 will have 4 short notes based on the prescribed texts. Students will be required to attempt any 3. Each short note will carry 4 marks.
3. Question no. 2 to 5 will be essay type questions testing students understanding of the prescribed texts.

In question no. 2 to 5, there will be one question from each unit with internal choice.

Stock Market and Investment Planning

Paper Code: BAECO213

Paper: Stock Market and Investment Planning

Internal Marks: 40

Mode of Exam: NUES

Lectures-2, Tutorial-1

Total Credits - 3

External Marks: 60

Course Objectives: The course aims to introduce the students to the basic functioning of Indian Stock market and familiarise them with various investment options and investor rights.

Course Outcomes

CO1: To introduce students to stock markets and basics of investment

CO2: To give students an insight into income stream evaluation

CO3: To familiarize students with equity valuation concepts and procedure

CO4: To equip students with grievance redressal mechanism and make them aware of investor rights

Unit I: Introduction to Stock markets and Investment

The Investment Decision Process – Types of Investments: Commodities, Real Estate and Financial Assets – Indian Securities Market – Market Participants – Trading of Securities – Security Market Indices – Sources of Financial Information – Return and Risk: Concept, Calculation – Trade-off between Return and Risk – Impact of Taxes and Inflation on Returns

Unit II: Valuation of Fixed income securities

Fundamentals of Investment Bonds – Estimating Bond Yields – Bond Valuation – Default Risk and Credit Rating

Unit III: Equity Analysis and Valuation

Fundamental Analysis of Securities – Technical Analysis of Securities – Efficient Market Hypothesis – Valuation of Equity Shares: Dividend Capitalisation Models and Price Earnings Approach

Unit IV: Investor Protection

SEBI & Role of Stock Exchange in Investor Protection – Investor Grievances and Redressal System – Insider Trading – Investor Awareness

Recommended Readings

1. Tripathi, V. *Fundamentals of Investment*. Taxmann Publication, New Delhi.
2. Avadhani, V. A. *Investment Management*. Himalaya Publishing House Pvt. Ltd., Mumbai.
3. Chandra, P. *Investment Game: How to Win*. Tata McGraw Hill Education, New Delhi.
4. Milling, B. E. *The Basics of Finance: Financial Tools for Non-Financial Managers*. Universe Company, Indiana,
5. Zokaityte, A. *Financial Literacy Education*. Palgrave Macmillan, London.
6. Indian Institute of Banking & Finance. *Introduction to Financial Planning*. Taxmann Publication, New Delhi.
7. Pandit, A. *The Only Financial Planning Book that You Will Ever Need*. Network 18 Publications Ltd., Mumbai.
8. Sinha, M. *Financial Planning: A Ready Reckoner*. McGraw Hill Education, New York.
9. Mittra, S., Rai, S. K., Sahu, A. P., & Starn, H. J. (2020). *Financial Planning*. Sage Publications India Pvt. Ltd., New Delhi.
10. Kothari, R. (2010). *Financial Services in India-Concept and Application*. Sage Publications India Pvt. Ltd., New Delhi.

University School of Environment Management (USEM)

Introduction to Corporate Social Responsibility (CSR)

Paper Code: BSCES – 207 MDC

L-03

Credit-03

Course Objectives

CO1	To introduce the students about the basic concept of Corporate Social Responsibilities
CO2	To impart knowledge on various provisions of Companies Act 2013 related to CSR in India and highlight the significance of CSR
CO3	To introduce the students about the activities taken up under CSR in India
CO4	To discuss few CSR cases by corporate industries

Unit-I : Meaning and Definition- History of CSR - Concepts of Charity, Corporate philanthropy- Sustainability and Stakeholder Management through triple bottom line. Sustainable Business-relation between CSR and Corporate governance -Environmental aspect of CSR, Chronological evolution of CSR Initiatives in India.

Unit- II Types of activities undertaken by the corporate under under CSR. Stake holders of CSR schemes. Sustainable Development Goals- Relationship between CSR.Section 135 of Companies Act 2013.Scope for CSR Activities under Schedule VII- Appointment of Independent Directors on the Board .

Unit-III

Role of Public Sector in Corporate, government programs- Nonprofit and Local Self Governance in implementing CSR.

Current trends and opportunities in CSR. Case studies of successful corporate initiatives and challenges of CSR. Differences between Environmental, social and Governance(ESG) and CSR.

Roles and responsibilities of corporate foundations.

Course Expected Outcomes

CEO1	The course will provide clear understanding about CSR and its purposes
CEO2	Students will be able to understand the opportunities and constraints of CSR
CEO3	Students will be able to acquire knowledge about various activities companies undertaken in their CSR scheme for common people
CEO3	Students will also understand about different corporate organizations

Suggested Readings and References

1. Suzanne Benn and Dianne Bolton 2010 Key Concepts in Corporate Social Responsibility, SAGE Publications Ltd
2. William B. Werther Jr. and David Chandler (2011) Strategic Corporate Social Responsibility: Stakeholders in a Global Environment, Second Edition, Sage Publications
3. Sanjay K Agarwal (2008) Corporate Social Responsibility in India, Sage Publications,
4. Mark S. Schwartz (2011) Corporate Social Responsibility: An Ethical Approach, Broadview Press,
5. George Pohle and Jeff Hittner (2008) Attaining Sustainable Growth through Corporate Social Responsibility, IBA Global Business Services.

University School of Basic and Applied Sciences (USBAS)

Mathematical Data Science

Paper Code	SEMESTER	COURSE	L	P	Total credits
BSID101	1	MATHEMATICAL DATA SCIENCE	2	1	3

CO: Course Objective

CO1	To introduce various types of data and their sources
CO2	To analyse the data with models
CO3	To understand basic concepts of data sets for creation and rectification

COE: Course Expected Outcomes

COE1	Understand the basic concepts of data sciences
COE2	Enhance the mathematical logical skills by learning different techniques.
COE3	Understand the techniques in solving problems for regression
COE4	To provide reasoning and arguments to justify conclusions

UNIT-I: Principles of Data Science: Types of Data: nominal, ordinal, interval, and ratio; Steps involved in data science casestudy: question, procurement, exploration, modeling, and presentation; Structured and unstructured data: streams, frames, series, survey results, scale and source of data – fixed, variable, high velocity, exact and implied/inferred; Overview of problems with data – dirty and missing data in tabular formats – CSV, anomaly detection, assessing data quality, rectification and creation methods, data hygiene,

Unit-II: Mathematical Foundations: Model driven data in R^n , Log-likelihoods and MLE, Chebyshev, and Chernoff-Hoeffding inequalities with examples, Importance sampling; Cosine and angular distances, KL divergence; Distances applied to sets– Jaccard, and edit distances; Modeling text with distances; Linear Regression: Simple, multiple explanatory variables, polynomial, cross-validation, regularized, Gradient descent.

Unit-III: Dimensionality Reduction, Clustering and Classification: Problem of dimensionality, Principal component analysis, Singular value decomposition (SVD), Best k-rank approximation of a matrix, Eigenvector and eigenvalues relation to SVD, Multidimensional

scaling, Linear discriminant analysis; Clustering: Mixture of Gaussians, Hierarchical clustering, Density-based clustering and outliers, Mean shift clustering; Classification: Linear classifiers, Perceptron algorithm, Kernels, Support vector machines, and k-nearest neighbors (k-NN) classifiers.

Text Books:

1. Cleaning Data for Effective Data Science, Mertz, David. Packt Publishing.
2. Principles of Data Science, Ozdemir, Sinan. Packt Publishing.
3. Mathematical Foundations for Data Analysis, Phillips, Jeff M. Springer.

Reference Books:

1. Mathematical Foundations of Data Science Using R. Frank Emmert-Streib, et al. De Gruyter

University School of Chemical Technology (USCT)

CT-209	Introduction to Fuel Technology	L-T-P: 3-0-0	3 Credits	MDC-3
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Pre-requisites: None

COURSE OBJECTIVES

To learn about the various types of fuels and their processing techniques and understand the fundamentals of combustion process.

COURSE OUTCOMES

After completion of the course students will be able to:

1. Understanding of fuels, composition, properties and their processing.
2. Knowledge of petroleum derived fuels products, extraction and refining techniques.
3. Understanding the fundamental concepts of combustion of fuels.
4. Learning of calculation of calorific value of fuels, and strategies for emission reduction.

COURSE CONTENT

UNIT 1: Introduction to Fuels and Energy

(06 Hrs)

Energy sources: fossil fuels vs renewable sources; Classification of fuels: solid, liquid, gaseous; Overview of global and Indian energy consumption trends; Basic fuel properties: calorific value (gross vs net), ignition temperature, spontaneous ignition; Flue gas composition and environmental relevance (simple ORSAT-based understanding)

UNIT 2: Solid Fuels (Coal and Biomass)

(08

Hrs)

Formation and classification of coal and biomass; Overview of coal cleaning/beneficiation processes; Basic tests: proximate and ultimate analysis (conceptual); Introduction to coke manufacturing processes and its industrial relevance; Emerging importance of bio-based solid fuels, utilization of biomass.

UNIT 3: Liquid Fuels (Petroleum and Biofuels)

(08

Hrs)

Basics of petroleum origin and refining (distillation overview); Types of liquid fuels: gasoline, diesel, kerosene, biodiesel; Key properties: octane/cetane numbers, knocking, additives to enhance of properties; Introduction to synthetic fuels and alternative liquid fuels

UNIT 4: Gaseous Fuels and Applications**(10****Hrs)**

Natural gas, biogas, producer gas, water gas, LPG, hydrogen; Basic production and purification methods; Applications in industry, transport, and household sectors; Safety, storage and emission considerations

TEXT AND REFERENCE BOOKS

1. S Sarkar, *Fuels and Combustion*, Third Edition, CRC Press, 2010.
2. S R Turns, *An Introduction to Combustion: Concepts and Applications*, Third Edition, McGraw Hill, 2011.
3. H S Mukunda, *Understanding Combustion*, Second Edition, Universities Press, 2009.
4. P Gupta, *Elements of Fuel & Combustion Technology*, Khanna Publishers, 2018.

Course Outcome (CO) to Programme outcomes (PO) Mapping (Scale 1: Low; 2: Medium; 3: High)												
CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12
CO1	3	3	3	2	1	3	2	1	3	1	1	3
CO2	3	3	3	2	1	3	2	1	3	1	1	3
CO3	3	3	3	2	1	3	2	1	3	1	1	3
CO4	3	3	3	2	1	1	2	1	1	1	1	3

Skill Enhancement Courses

University School of Liberal Arts (USLA)

Indian Heritage and Culture

Nature of Course: SEC
Course Code : BALA 219
Semester: Third (III)
Credits: 3 (L2: T1)

Mode of Examination: UES
Course ID :
Marks: 100 (40+60)
Internal Evaluation: 40
External Evaluation: 60

Course Objective

To familiarize students with various aspects of Indian culture.

Course Outcome

CO1 (Knowledge): Learn about India's rich cultural traditions, literature, art and architecture.

CO2 (Understanding): Understand the philosophy and socio-cultural milieu behind different artistic traditions.

CO3 (Synthesis): Analyse how different artistic traditions interacted with each other.

CO4 (Application): Learn about regional traditions and how they relate to larger sub-continental trends.

Course Content

Unit-I: Languages and Literature

- Sanskrit: Kavya – Kalidas' Ritusambhara: Prakrit: Gatha Saptasati, development of vernacular language and literature.
- Indo-Persian Literature: Amir Khusrau's works; Urdu poetry and prose: Ghalib.

Unit-II: Performing Arts

- Hindustani music.
- Carnatic music.
- Devotional music: Bhakti and Sufi.
- Classical and folk dance, classical and folk theatre.

Unit-III: Architecture: meanings, form and function

- Rock-cut temple at Mamallapuram.
- Structural temple architecture: Khajuraho complex and Tanjavur temple.
- Fort of Daulatabad or Chittor forts.
- Palace-dargah at Fatehpur Sikri.

- e. Lutyens' Delhi.

Unit-IV: Sculptures and Painting

- a. Silpashastras and normative tradition.
- b. Narrative art and mural fresco paintings, Ajanta and Ellora.
- c. Mughal paintings, painters and illustrated texts.
- d. Modern and Company school, Ravi Varma, Bengal School, Amrita Sher-Gil and Progressive Artists.

Pedagogy

- Classroom lectures/project work.
- Field trips to various sites in Delhi and outside– National Museum, National Art Gallery etc.
- Screening documentaries on Indian art and culture.

Text Books

1. Asher, Catherine, (ed.), Perceptions of India's Visual Past, AIIS, Delhi, 1994.
2. Brown, Percy, Indian Architecture, Buddhist Hindu and Islamic, Vol. I, II, Mumbai, 1956.
3. Mitter, Partha, Art and Nationalism in Colonial India, OUP, Delhi, 1994.
4. Koch, Ebba, Mughal Art and Imperial Ideology, New Delhi, Oxford University Press, 2001.

Recommended Readings

1. Asher, Catherine, Architecture of Mughal India, Cambridge University Press, 1992.
2. Basham, A.L., The Wonder that was India, New Delhi, 1954.
3. Deva, B.C., An Introduction to Indian Music, Delhi, 1973.

Ethics and Dilemmas in Politics

Nature of Course: SEC
Course Code: BALA 221
Semester: Third (III)
Credits: 3 (L2 T1)

Mode of Examination: UES
Course ID:
Marks: 100 (40+60)
Internal Evaluation: 40
External Evaluation: 60

Course Objective

Ethics is an important component of every political decision-making. By looking at the intersection of ethics and politics, this course will help students to develop a conceptual framework to navigate the difficult terrain. This course will introduce the idea of ethics and how we look at different issues which present us with a dilemma.

Course Outcome

CO1 (Knowledge): Students will learn ethics and principles relevant to political decision-making.

CO2 (Understanding): Students will develop an understanding of the complex interplay between ethics, power, and politics.

CO3 (Synthesis): Students can engage in respectful and constructive dialogue on controversial political issues.

CO4 (Application): Students will develop an understanding of ethical dilemmas and making reasoned judgments.

Course Content

Unit I: Foundations of Political Ethics

- a. Introduction to ethics
- b. The relationship between ethics, politics, and power
- c. Gita as a Political text: Nishkama Karma

Unit II: How to do the right thing

- a. Utilitarianism and Justice
- b. Euthanasia

Unit III: Ethics, Social Justice and Equality

- a. Abortion: Women's body as a battleground
- b. Marital Rape

Unit IV: Ethics in International Relations

- a. Just War
- b. Humanitarian Intervention

Pedagogy

- Lectures
- Classroom discussion/Interaction
- Project and Assignment
- Documentary/ Movies
- Minor Test

Text Books

1. Gowda, Nagappa K. The Bhagavad Gita in the Nationalist Discourse. Oxford: Oxford University Press, 2012.
2. Lanphier, E. "Abortion and the Intersection of Ethics, Activism, and Politics." The American Journal of Bioethics 22, no. 8 (2022):,pp.72–74.<https://doi.org/10.1080/15265161.2022.2089286>.
3. Luban, David. "Intervention and Civilization: Some Unhappy Lessons of the Kosovo War." 2002. DOI:<https://doi.org/10.7551/mitpress/3302.003.0006>.
4. Sandel, Michael J. Justice: What's The Right Thing To Do?. New York: 2007.

Recommended Readings

1. Banerjee, Sanhati, Battleground Body: Sexism and the Right to Safe Abortions in India. Available at:<https://science.thewire.in/health/safe-abortion-access-sexism/>.
2. Kumari, V. Gender Analysis of the Indian Penal Code: Rape and the Law. Available at:http://www.womenstudies.in/elib/crime_ag_women/ca_gender_analysis.pdf.
3. Mandal, Saptarshi. "The Impossibility of Marital Rape: Contestations around Marriage, Sex, Violence and the Law in Contemporary India." Australian Feminist Studies, 2014.
4. Sullivan, J. P. "The Ethics and Politics of Abortion." Philosophy of the Social Sciences 17, no. 3 (1987),pp. 413-425. Available at [:https://doi.org/10.1177/004839318701700307](https://doi.org/10.1177/004839318701700307).
5. Walzer, Michael. Just and Unjust Wars: a Moral Argument with Historical Illustrations. New York: Basic Books, 1992.

Conceptualizing Everyday Life

Nature of the Course: SEC
UES

Semester: Third (III)

Course Code: BALA 223

Credits: 3 (L2 T1)

Mode of Examination:

Course ID:

Marks: 100 (40+60)

Internal Evaluation: 40

External Evaluation: 60

Course Objective

The course aims to delve into the intricate dynamics of everyday life, exploring the formation and implications of mundane routines and their impact on the modern work culture and individual experiences of alienation. Students will examine the concept of leisure, its emergence, and its integration into daily life, alongside the associated issues of boredom. The course will also investigate how mundane moments are transformed into spectacular events through social media and public spaces, and how these spectacles contribute to alienation. Additionally, the course will critically analyze pop culture expressions and creative outlets that reflect and resist the monotony of everyday life, encouraging students to engage in practical exercises to observe and document their own daily experiences.

Course Outcome

After Completing this course, students will be able to

CO1 (Knowledge): Students will acquire comprehensive knowledge of the concepts and theories related to everyday life, including the routinization of daily activities, modern work culture, and the formation of mundane experiences.

CO2 (Understanding): Students will develop a deeper understanding of how everyday life is structured and experienced, including the processes that lead to routinization and alienation.

CO3 (Synthesis): Students will be able to integrate and synthesize theoretical knowledge with practical observations to critically evaluate the impact of modern work culture, leisure, and spectacles on individual and collective experiences.

CO4 (Application): Students will apply their acquired knowledge and understanding to analyze real-life scenarios, such as expressions of irritation and boredom in everyday life, and the creation of spectacles in various contexts.

Course Content

Unit I: “Boring Life”: Unboxing the Concepts

- a. Understanding the concept of ‘Everyday Life’
- b. Formation of the ‘mundane’: routinisation of Life
- c. Modern Work Culture and Alienation
- d. Breaking 24 Hours into Time: Work Hour- Rush Hour – Drive Hour – Leisure Time

Unit II: “Let’s Take a Break”: The Idea of Leisure

- a. The idea of leisure: Emergence of the phenomenon
- b. Avenues of leisure: Saturday Night, Movie, Shopping, etc.
- c. Routinisation of Leisure
- d. The problem of Boredom

Unit III: “Let’s do something Exciting!” Creating spectacular moments from the mundane

- a. The Concept of ‘Spectacle’
- b. Social Media and everydayization + democratization of Spectacle
- c. Sites of creating ‘spectacle’: Travel, Food, Public Spaces
- d. Spectacles as the highest form of alienation

Unit IV: Pop Criticisms of ‘Everyday Life’

- a. Expressions of irritation: road rage, the burst of anger, interpersonal ‘mundane’ conflicts
- b. Creative expressions (memes, reels, jokes, etc.) of ‘everyday life’.
- c. ‘Boredom’ as Critique
- d. Particle Exercises (Observing and Documenting everyday life)

Pedagogy

- Lectures
- Presentation and Discussion
- Movies and Videos
- Practical Exercises

Text Books

1. Gardiner, Michael. *Critiques of Everyday Life*. Routledge. New York. 2000
2. Scott, Susie. *Making Sense of Everyday Life*. Polity Press. Cambridge. 2009
3. Guy Debord. *Society of the Spectacle*. Pattern Books. London. 1967
4. Marx, Karl. *Economic and Philosophical Manuscripts*. Progress Publishers. Moscow. 1968

Recommended Readings

1. Lechner, Norbert, Victoria Furio, and Mariana Ortega-Breña. “The Study of Everyday Life.” In *On Democratic Politics: A Selection of Essays by Norbert Lechner*, edited by Velia Cecilia Bobes and Francisco Valdés-Ugalde, 95–110. Latin America Research Commons, 2023.
2. Poster, Mark. “Everyday (Virtual) Life.” *New Literary History* 33, no. 4 (2002): 743–60.
3. Manovich, Lev. “The Practice of Everyday (Media) Life: From Mass Consumption to Mass Cultural Production?.” *Critical Inquiry* 35. 2009

4. Williams, J. Patrick, and Dennis D. Waskul. "Mundane Life in a Media Age." *Symbolic Interaction* 30, no. 4 (2007): 627–36.
5. Brissett, Dennis, and Robert P. Snow. "Boredom: Where the Future Isn't." *Symbolic Interaction* 16, no. 3 (1993): 237–56.
6. Weirnerman, Jason, and Cari Kenner. "Boredom: That Which Shall Not Be Named." *Journal of Developmental Education* 40, no. 1 (2016): 18–23.
7. Hansen, A. *Capitalism, Consumption, and the Transformation of Everyday Life: The Political Economy of Social Practices*. In: Hansen, A., Bo Nielsen, K. (eds) *Consumption, Sustainability and Everyday Life . Consumption and Public Life*. Palgrave Macmillan. Cham. 2023
8. Life under capitalism is monotonous/ repetitive to deprive us of time & drive emotional numbness. <https://wokescientist.substack.com/p/life-under-capitalism-is-structured>
9. Seligman, Ben B. "On Work, Alienation, and Leisure." *The American Journal of Economics and Sociology* 24, no. 4 (1965): 337–60
10. Robinson, J. P. (1978). "Massification" and Democratization of the Leisure Class. *The ANNALS of the American Academy of Political and Social Science*, 435(1), 206-216
11. Ho, CH. (2023). Leisure, Well-Being, and Quality of Life in the Digital Age: Social Media and Online Communities as Leisure Settings. In: Uysal, M., Sirgy, M.J. (eds) *Handbook of Tourism and Quality-of-Life Research II*. International Handbooks of Quality-of-Life. Springer, Cham.

University School of Humanities and Social Sciences (USHSS)

Translation- Theory and Practice

Nature of the Course: SEC

Mode of Exam: UES

Course Title: Translation- Theory and Practice

Course Code: BAENG213

Credits: 3 (L 2, T1)

Total Marks: 100 (40 + 60)

Course Objectives:

To impart skills of literary translation among students; to introduce students to the theory of translation;

Course Outcomes: After finishing the course, students will

CO1 (Knowledge): know about different approaches of translation and their methods;

CO2 (Understanding): gain an understanding of the nuances of translation, its challenges, gains and losses;

CO3 (Communication): be able to do translation, discuss concepts and problems of translation;

CO4 (Research): be able use the insights of translation studies for research at a later stage.

Unit- I: A brief history of translation in India, Understanding the basic concepts, Types of Translation, Problems of Translations, Loss and Gain

Unit- II: “Translation as New Writing” by Sujit Mukherjee
“Translation as Culture” by Gaytri Charkravorty Spivak
“The Politics of Post-Colonial Translation” by Harish Trivedi

Unit-III: Case Study of Translations*

Unit- IV: Assignments based on Translation

***NOTE:** The teacher will decide the content of the Unit- III. However, the concerned teacher will be required to share the content with the APC of the School before the commencement of the Semester.

Pedagogy:

- This course should be taught to instill translation skills among students. The focus will be more on the practical side of translation than the theoretical. Students should be given hand-on experience of translation through assignments on a regular basis. Classroom lectures, practice sessions, comparison of different translations of one text. If required, the teacher may also organize short-term workshops on translation for the benefit of the students.

Recommended Readings:

1. Bassnett, Susan. *Translation Studies*. Routledge, 2002.
2. Newmark, Peter. *A Textbook of Translation*. Prentice Hall, 1998.
3. Mukherjee, Sujit. *Translation as Discovery*. Orient Longman, 2006.
4. Valdeon, Roberto A. *Contemporary Approaches to Translation Theory and Practice*. Routledge, 2019.

5. Venuti, Lawrence. *The Translation Studies Reader*. Routledge, 2021.

Examination Scheme:

1. There will be **five** questions in total with internal choice. Each question will carry **12** marks.
2. Question no. 1 will have 4 short notes based on the prescribed texts. Students will be required to attempt any 3. Each short note will carry 4 marks.
3. Question no. 2 to 5 will be essay type questions testing students understanding of the prescribed texts.
4. In question no. 2 to 5, there will be one question from each unit with internal choice.

Content Writing for Media

Nature of the Course: SEC
Course Title: Content Writing for Media
Course Code: BAENG229
Credits: 3 (L2, T1)

Mode of Exam: UES

Total Marks: 100 (40 + 60)

Course Objective:

This curriculum is designed to be accessible and engaging for first-year undergraduate students from diverse backgrounds, providing them with a foundational understanding of content writing, copyright issues, and media ethics.

This course aims to introduce first-year undergraduate students to the basics of content creation, including writing for blogs, commentary, editorials, and understanding copyright issues. It will provide the practical skills and knowledge necessary for producing effective and ethical content across various media platforms.

Course Outcomes:

1. **CO1 (Knowledge):** Students will know different forms of content writing and knowledge of fundamentals of content writing
2. **CO2 (Understanding):** Students will gain an understanding of the nuances of content writing for media, its challenges;
3. **CO3 (Communication):** Students will be able to write for media and develop skills for writing engaging and informative blogs, commentary, and editorials

Unit 1: Fundamentals of Content Writing

Introduction to Content Writing

- Definition and importance of content writing in the digital age
- Overview of different content forms: blogs, commentary, editorials, and more

Basics of Effective Writing

- Elements of good writing: clarity, coherence, and conciseness
- Writing for different audiences and purposes

Writing Practice and Exercises

- Short writing assignments to practice basic writing skills
- Peer review and feedback sessions

Unit 2: Understanding Copyright and Ethics

Basics of Copyright Law

- Definition and purpose of copyright
- Key concepts: intellectual property, fair use, and public domain

Copyright in Content Creation

- How to legally use and cite sources
- Understanding plagiarism and how to avoid it

Ethical Considerations in Writing

- Ethical issues in content creation and journalism
- Case studies on copyright infringement and ethical dilemmas

Unit 3: Writing for Different Media

Blogging

- Introduction to blogging platforms and tools
- Tips for writing engaging blog posts and building an audience

Commentary and Opinion Writing

- Difference between news reporting and commentary
- Techniques for writing persuasive and insightful opinion pieces

Editorial Writing

- Structure and style of editorials
- Writing editorials on current issues and presenting balanced viewpoints

Evaluation Methods:

- Written assignments and blog posts
- Group discussions and peer reviews
- Quizzes on copyright and ethics
- Participation in class activities and writing workshops

Recommended Readings:

1. Carey, J. W., *Communication as culture: Essays on Media and Society*. Routledge, 1998.
2. Nelson J. L., *Imagined Audiences: How Journalists Perceive and Pursue the Public*, OUP, 2021.
3. Raman, Usha. *Writing for the Media*. OUP, 2009.
4. Thompson Rick. *Writing for Broadcast Journalists (Media Skills)*. Routledge, 2004.

Data Analysis with 'R'

Paper Code: BAECO215

Tutorial -1

Paper: Data Analysis with 'R'

Lectures - 2,

Total Credits –3

Mode of Exam: NUES

Total Marks: 100

Course Objectives: The objective of the course is to familiarize students with 'R' programming language and software environment for data manipulation, exploratory data analysis and data visualizations.

Course Outcomes

CO1: To impart the knowledge on basic concepts of R programming.

CO2: To familiarize students with different data types and data transformation.

CO3: To enable students to manipulate, explore and analyse data using R

CO4: To enable students to create and save R program files and write assessment reports based on the analysis

Unit I: Introduction to R Ecosystem

History of R, R packages, CRAN – Overview of R Coding Tools: RStudio – Basic Syntax: Constant, Operators, Functions, Variables, Loops – Data Types and Data Structures in R: Cross Section, Time Series, Panel – Data Analysis – Descriptive Statistics – Analysis of Variance – Correlation

Unit II: Data Transformation and Visualization using R

Data Transformation: Converting Numeric Variables into factors, data operations, string parsing, geocoding – Data Cleaning: Missing Values, data imputations, duplicates, outliers, spelling – Exploratory Analysis with basic graphic tools: Box Plots, Bar Charts, Line Plots, Heat Maps – Customize Plot axes, labels, legends, colours

Unit III: Introduction to Causal Analysis

Introduction – Linear Regression – Categorical Variables – Logistic Regression – Estimation, Interpretation, Hypothesis

Unit IV: Assignments and Discussions

The students would be required to do assignments and case studies applying the concepts discussed in the class

Recommended Readings

1. Everitt, Brian S., and Hothorn, Torsten,(2006)*A Handbook of Statistical Analyses Using R*. United States, CRC Press.
2. Seema Acharya (2018) *Data Analytics Using R*, McGraw Hill.

Suggested Case Studies and Data Sets

Dua, D. and Graff, C. (2019). UCI Machine Learning Repository [http://archive.ics.uci.edu/ml]. Irvine, CA: University of California, School of Information and Computer Science

University School of Environment Management (USEM)

SUSTAINABLE DEVELOPMENT

Paper Code - BSCES – 209 (SEC 3)

L -03

Credits -03

Course Objectives

CO ₁	To make students aware about the sustainability concept and principles
CO ₂	To make the students understand how sustainable development has evolved at international level and why it is important in present day context
CO ₃	To make them learn about various UN Sustainable Development Goals (Agenda 2030)
CO ₄	To impart basic understanding of various emerging concepts in sustainability

Course Contents

Unit-I: Evolution of Sustainable Development Concept

Concept of Sustainability, Sustainable development: Need for sustainable development, Sustainability theory, Principles and dimensions, Evolution of the concept at global level: Brief account of - Limits to Growth, Brundtland Commission Report, Rio Protocol -Agenda 21, Johannesburg Declaration of Sustainable Development, Rio+20, Paris Agreement, Conference of the parties (COP) major resolutions, UN millennium Goals.

Unit-II: Sustainable Development Goals (SDGs)

Introduction to the UN's Agenda 2030 and the 17 Sustainable Development Goals (SDGs), Targets and Indicators of SDGs, Challenges and Strategies of SDGs with special emphasis on Clean water and sanitation (SDG 6), Affordable and clean energy (SDG 7), Responsible consumption and production (SDG 12), Climate action (SDG 13); Life below water (SDG 14), and Life on land (SDG 15).

Unit-III: Emerging concepts in sustainability

Brief Introduction to emerging concepts in sustainability : Sustainability principles of Earth, Equity and Inclusive growth, Climate-Smart Agriculture, Carrying capacity, Energy transitions, Net Zero, Nationally Determined Commitments (NDC), Circular economy,

Biodiversity protocols (COP26) , Combating Desertification, ESG for sustainable business; Smart cities, Resilient communities.

Suggested Readings and References

1. N.R. Krishnan. 2022. A Green Economy: India's Sustainable Development. Atlantic Publishers, India
2. G.Tyler Miller & Scott Spoolman. 2015. Environmental Science. CENGAGE Learning Custom Publishing; 15th ed.
3. David Pearce , Edward Barbier , & Anil Markandya. 2000. Sustainable Development: Economics and Environment in the Third World. Routledge Publ.
4. William P. Cunningham, Mary Ann Cunningham. 2017. Environmental Science: a global concern. McGraw-Hill Education, New York
5. Rogers, Peter P., Kazi F. Jalal, and John A. Boyd. 2007. An Introduction to Sustainable Development, Earthscan.

Course Expected Outcomes

CO₁	The students will get an understanding about Sustainability concept , its development over the years and its utmost present-day importance
CO₂	The students will become aware and understand the SDGs and various efforts being made at global, national, and regional levels to meet these goals
CO₃	The students will understand various new approaches to achieve sustainability in relation to Climate action, biodiversity conservation, clean energy and water, resilience, sustainable cities, and sustainable business and so on.
CO₄	The course will help develop a sustainable approach in the learners

University School of Basic and Applied Sciences (USBAS)

Skill Enhancement Course - 3 credits					
Paper Code	SEM	COURSE	L	P	Credits
	1/3 (odd)	The Story of Science	3	0	3

Course Objectives

CO1- The course helps students develop skills such as Critical Thinking & Analytical Skills

CO2- The course will show how scientific ideas evolved and their impact on society

CO3- The course will develop an ability to engage with scientific concepts in an informed way and promote Research & Inquiry Skills

CO4- The course will connect science with philosophy, history, and culture and teach effective communication and translating scientific ideas into narratives that non-specialists can understand

Unit-I: Introduction: a review of the present scenario of science and science education in society and the attitudes and misconceptions. An essence of what science is and an overview of the practical and poetic reasons for everybody to familiarise with it.

Unit-II: Probabilities: The basic concept of probabilities. Learning to think quantitatively. Basic concepts

Unit-III: Calibration: numbers and scales in the real world. Measurements

Unit-IV: Physics: What is the enterprise of physics? Matter and forces and laws. From subatomic particles to the Universe

Unit-V: Chemistry: Molecules and reactions. Chemical bonds and materials. Real life examples

Unit-VI: Evolutionary Biology: The evolution and diversity of life forms. Darwinism. DNA- the molecule of life:

Unit-VII: Molecular Biology: Cells, proteins, DNA, RNA. The genome. Pharmaceuticals

Unit-VIII: Geology: The Earth and its evolution and composition. Plate tectonics and the geography of the earth
Unit-IX: Astronomy. The Universe, planets, Stars, Galaxies and how we study them.

Reference: - "The Canon: A Whirligig Tour of the Beautiful Basics of Science" Natalie Angier, Faber & Faber.(2007)

Course Expected Outcomes:

CEO1 - Students with both science and non science backgrounds will view and respect the vast importance and beauty of the basic sciences as a great human intellectual endeavour

CEO2 - Students will learn what entails the scientific enterprise and its fascinating aspects

CEO3 - The course will be a beginning to start a dialogue on bridging the gap between the humanities and the sciences as lamented in C P Snow's reference to the "two cultures"

CEO4 - Students will learn and develop skills such as Critical Thinking & Analytical Skills

Paper Code	SEMESTER	COURSE	L	P	Total credits
BSSEC 101	1	EXCEL I	2	1	3

CO: Course Objective

CO1	Introduction to Workbook and worksheet
CO2	Introduction to formulas in workbook and worksheet
CO3	Introduction to various types of Charts

COE: Course Expected Outcomes

COE1	To understand the use of Workbook and worksheet
COE2	Ability to apply formulas in workbook and worksheet
COE3	Able to use various types of Charts
COE1	To understand the real life applications in spreadsheets

Unit I:

Workbook and worksheets- Navigation with keyboard, Tabs and ribbons, file menu, quick access toolbar, create print and save workbook, worksheet basics, protecting excel workbook and worksheet, importing and exporting data, co-authoring; Data and Formatting-Adding Data, Cut Copy Paste, Data fill, Data Movement , Cell Formatting, Conditional Formatting, Cell Operations, Reusable Lists , Data Validation, Sorting And Filtering , Tables. Saving and updating workbooks, Insert and remove hyperlinks, The Sparkline, The Trendline

Unit II:

Understanding formulas; operators in formula; named ranges; calculations; functions in formulas; relative and absolute addressing; referencing cells outside the worksheet and workbook; functions - logical, summarizing, text , lookup, reference, data and time, math functions; error handling, formula auditing.

Unit III:

Charts types and uses, Chart depiction – column, line, pie, bar, bubble, histogram Analysis - Pivot Table, Pivot Charts, Create and email worksheet, preparing to print, Page Setup options, Printing worksheets

Text Books:

1. Manisha Nigam, “Data Analysis with Excel”, BPP publications
2. Microsoft Excel 2019 Data Analysis and Business Modeling Skills), 6th Edition, by Wayne Winston

Reference:

1. Excel 2019 Bible, 1^o Edition, by Michael Alexander Richard Kusleika, Walkenbach

Skill Enhancement Course - 3 credits					
Paper Code	SEMESTER	COURSE	L	P	Total credits
BSSEC 201	3	LATEX I	2	1	3

CO: Course Objective

CO1	LaTeX, a high-quality open-source typesetting
CO2	Introduction to concepts in LaTeX
CO3	Introduction to various types of ITRANS packages

UNIT-I: Getting Started with LaTeX: Installing and using LaTeX for creating a first LaTeX document; Formatting text and understanding LaTeX commands and environments; Designing pages, Creating a book with chapters and table of contents, Creating and customizing lists, Including images, and creating tables with captions.

UNIT-II: Cross-References, Index, Bibliography and Large Documents: Setting labels and references, Hyperlinks; Customizing the table of contents, Generating an index, Creating a bibliography; Writing basic math formulas and equations; Developing large documents by splitting the input and creating front/back matter.

UNIT-III: Typesetting in Indian Languages using LaTeX: Transliteration symbols with illustrative examples of the Indian languages, such as Sanskrit, Hindi (Devanagari), Punjabi, and Malayalam; Creation of the transliterated document for typesetting in Devanagari (for Sanskrit, Hindi, and Marathi), Gurumukhi (for Punjabi), and Rachana (for Malayalam); ITRANS pre-processor package to convert English-encoded text into various Indian language script such as Gujarati, Bengali, Kannada, Tamil, Telugu, etc.

Text Books:

1. LaTeX Beginner's Guide (2nd ed.). Kottwitz, Stefan, Packet Publishing Ltd.
2. **LaTeX for Beginners., Nambudiripad, K.B.M. Narosa Publishing.**
3. <https://ctan.org/pkg/devanagari>; <https://www.ctan.org/pkg/gurmukhi-singh>
4. <https://ctan.org/tex-archive/language/indian/itrans>

Ability Enhancement Course (AEC)

University School of Liberal Arts (USLA)

Travel Accounts

Nature of Course: AEC
Course Code: BALA 225
Semester: Third (III)
Credits: 2

Mode of Examination: NUES
Course ID:
Marks: 100
Continuous Evaluation

Course Objective

This course looks at how travellers have perceived India over the ages.

Course Outcome

CO1 (Knowledge): Know about important travel accounts, their writers and the places they visited; and placing them in historical context.

CO2 (Understanding): Understand how travel accounts in history offers us imaginative ways of knowing about past societies; and help us reconstruct parts of history despite their limitations.

CO3 (Synthesis): Appreciate how historians subject travel accounts to various kinds of scrutiny and draw out useful pieces of information.

CO4 (Application): Analyse and engage with at least one travel account to understand its relevance as tool of history writing.

Course Content

Unit I: Travelogues and History

- a. Travel accounts – Tropes and general approaches.
- b. Travelogues as a tool of history writing.
- c. Travel accounts: Biases and metaphors.

Unit II: Travel Narratives (300 CE- 1300 CE)

- a. Travel Accounts of Faxian and Xuanzang: Society, Culture and Buddhism.
- b. Al Biruni's India : culture and caste in Kitab-ul-Hind.
- c. Travels of Marco Polo and history of South India.

Unit III: Travelogues and dynasties (1300 CE -1600 CE)

- a. The Court and Kingship - Accounts of Tavernier and Bernier.
- b. Vijaynagara Empire - Travel Notes of Ibn Batuta and Niccolò de Conti.
- c. The English Arrival in India – Sir Thomas Roe.

Unit IV: Colonialism and Travel Writings

- a. The Indian Experience - Letters, Diaries and Travelogues.
- b. Women Travels and the Imperial Rule.
- c. Indian Travellers' Accounts – Vishnubhat Godse, Satyadev 'Parivrajak', Dean Mahomet's Travels of Dean Mahomet, A Native of Patna in Bengal, Through Several Parts of India, While in the Service of The Honorable The East India Company, Written by Himself, In a Series of Letters to a Friend (Cork: The Author, 1794)

Pedagogy

- Lectures, Classroom reading of texts, group discussions and Project Work.
- Assignment and presentation on using at least one text as source of History.

Text Books

1. Alam, Muzaffar, and Sanjay Subrahmanyam, Indo-Persian Travels in the Age of Discoveries, 1400–1800, Cambridge: Cambridge University Press, 2007.
2. Fisher, Michael H., Across the Three Seas: Travellers' Tales from Mughal India, New Delhi: Random House, 2007.
3. Bhattacharji, Shobhana (ed.), Travel Writing in India, New Delhi: Sahitya Akademi, 2008.
4. Ghose, Indira (ed.), Memsahibs Abroad: Writings by Women Travellers in Nineteenth Century India, Delhi: Oxford University Press, 1998.

Recommended Readings

1. Teltscher, Kate, India Inscribed: European and British Writings on India, 1600-1800, Oxford University Press, 1995.
2. Hulme, Peter, and Tim Youngs (eds.), The Cambridge Companion to Travel Writing, Cambridge University Press, 2002.
3. Das, Nandini and Tim Youngs (eds.), The Cambridge History of Travel Writing, Cambridge University Press, 2019.
4. Subrahmanyam, Sanjay, 'Early Modern Circulation between Central Asia and India and the Question of 'Patrotism'', in Green, Nile (ed.), Writing Travel in Central Asian History, Indiana University Press, 2014.
5. Sen, Tansen, 'The Travel Records of Chinese Pilgrims Faxian, Xuanzang, and Yijing', Education about Asia, 11 (no. 3), 2006, pp.23-33.
6. Digby, S., "Some Asian Wanderers in Seventeenth Century India: An Examination of Sources in Persian", Studies in History, 9(2), 1993, pp. 247-264. <https://doi.org/10.1177/025764309300900205>
7. Fisher, Michael H. (ed.), Visions of Mughal India: An Anthology of European Travel Writing, I. B. Tauris, 2007.

Public Opinion and Surveys

Nature of the Course: AEC
Course Code: BALA 227
Semester: Third (III)
Credits: 2

Mode of Examination: NUES
Course ID:
Marks: 100
Continuous Evaluation

Course Objective

The objective of the course is to provide analytical tools to the students to carry out surveys and public opinion surveys. The course provides a foundational idea of the various steps of surveys like data collection, data verification and data analysis.

Course Outcome

CO1 (Knowledge): The student will have the foundational knowledge of what is a survey and what are the various types of surveys.

CO2 (Understanding): The students will have the understanding to conduct and analyse surveys in different contexts.

CO3 (Synthesis): After the end of the course the students will have foundational ideas and conceptual understanding to carry out surveys in different settings.

CO3 (Application): The students will have the basic ability to critically apply the conceptual understanding of the different types of research surveys in field works.

Course Content

Unit I: Introduction

- a. Public Opinion- Definitions, Features
- b. Public Opinion in a Democracy- Opinion Poll, Exit Poll
- c. Market and Consumerism

Unit II: Understanding Surveys and Samplings

- a. Types of Surveys
- b. Types of Sampling
- c. Representation and Surveys

Unit III: Survey Methods, Analysis

- a. Quantitative data Analysis

Unit IV: Ethical Considerations and Research

- a. Ethics of Conducting Research and Surveys

Pedagogy:

- Lectures
- Classroom discussion/Interaction
- Project and Assignment
- Field Visits
- Documentary/ Movies

Text Books:

1. Lokniti Economic and Political Weekly, Vol. XXXIX (51). Political Analysis (2013), Vol. 21(1), pp. 48-69, (first published online November 21, 2012).

Recommended Readings

1. Purohit, Dr. Ashok, Public Opinion and Survey Research, NE Books and Publishers.
2. Kalton,G. Introduction to Survey Sampling. Beverly Hills: Sage, 2022.
3. Agresti,A and B. Finlay. Statistical methods for the Social Sciences, 4th edition, Upper Saddle river, NJ: Pearson Prentice Hall, 2009.
4. Kuma, S. and P. Rai. Measuring Voting Behaviour in India, New Delhi: Sage 2013.

Introduction to Social Work

Nature of the Course: AEC
Semester: Third (III)
Course Code: BALA 229
Credits: 2

Mode of Examination: NUES
Course ID:
Marks: 100
Continuous Evaluation

Course Objective

The objective of this course is to provide students with a comprehensive understanding of social work, encompassing its definition, scope, and objectives. It aims to elucidate the concepts of charity, philanthropy, social welfare, and social service while tracing the evolution of social work as a profession in India and highlighting the contributions of social reformers. The course seeks to analyze social problems and issues in India, such as poverty, unemployment, and the challenges faced by widows, the elderly, and orphans, along with their causes and impacts. Additionally, this course will equip students with the necessary skills and knowledge for effective social work intervention and offer hands-on experience through collaboration with NGOs to apply theoretical knowledge in real-world settings.

Course Outcome

After Completing this course, students will be able to

CO1 (Knowledge): Demonstrate a comprehensive understanding of the definition, scope, and objectives of social work, along with the key concepts of charity, philanthropy, social welfare, and social service.

CO2 (Understanding): Analyze the nature, causes, and impacts of various social problems in India, such as poverty, unemployment, and issues faced by widows, the elderly, and orphans, and understand the evolution of social work as a profession in the Indian context.

CO3 (Synthesis): Integrate knowledge from the study of social reformers and social work interventions to develop effective strategies for addressing social issues and improving community welfare.

CO4 (Application): Apply the skills and techniques learned to perform effective social work interventions, engage with NGOs, and gain practical, field-based experience in addressing real-world social problems.

Course Content

Unit I: Unboxing the Concepts

- a. Introduction to Social Work: Definition, Scope and Objective
- b. Meaning of Charity, Philanthropy, Social Welfare, and Social Service
- c. Evolution of social work as a profession in India

- d. Contribution of social reformers

Unit II: Social Problems and Issues in India

- a. Social Problems – Nature and Causes
- b. Concept of poverty- Causes and Impact
- c. Unemployment- Causes and Impact
- d. Problems of Widow, Old Age, and Orphans

Unit III: Social Work Intervention

- a. Role of a social worker
- b. Skill required for social work intervention
- c. Nature of social work intervention to address these problems

Unit IV: Field-based Experience

- a. Hand-on experience in social work in collaboration with NGO.

Pedagogy

- Lectures
- Discussion and presentations
- Field Visit based project work

Text Books

1. Chowdhary, Paul. D. (1992). Introduction to Social Work. New Delhi: Atma Ram and Sons.
2. Madan, G.R. (2009). Indian Social Problems (Volume 1 & 2). New Delhi: Allied Publishers Private Limited.
3. Wadia, A.R (ed). History and Philosophy of Social Work in India, Bombay: Allied Publishers Pvt. Ltd. 1961.

Recommended Readings

1. John, E. Tropmon, John L. Erlich. 2000. Tactics and Techniques of Community Intervention.
2. Si, Khan 1991. Organising – A Guide For Grassroots Leaders. NASW, USA
3. H. Hepworth, Ronald H Rooney, 1997, Direct social work practice –theory and skills, fifth edition Joann. Lauren. brooks/cole publishing company
4. Dash, Bishnu Mohan; Kumar, Mithilesh; Singh, D.P; Shukla, Siddheshwar (Eds.) Indian Social Work. Routledge. Oxon. 2021
5. Ahuja, Ram. Social Problems In India. Rawat Publication. Jaipur. 2001

University School of Humanities and Social Sciences (USHSS)

English Language and Grammar – III

Nature of the Course: AEC

Mode of Exam: UES

Course Title: English Language and Grammar – III

Course Code: BAENG215

Credits: 2 (L 2)

Total Marks: 100 (40 + 60)

Objectives: To impart knowledge about the English language and grammar to improve students' writing skills.

Course Outcomes: After the completion of the course, students will

CO1 (Knowledge): possess the knowledge of the various aspects of the English language;

CO2 (Understanding): have an understanding of the English language and grammar;

CO3 (Communication): help students improve their writing skills.

Course Content:

Unit I: Phrases: Noun Phrase, Adjective Phrase, Adverb Phrase,

Unit II: Clauses: Noun Clause, Adjective Clause, Adverb Clause

Unit III: Simple Sentences; Complex Sentences; Compound Sentences;
Transformation of Sentences

Unit IV: Assignments and Activities based on the topics covered in the above units

Pedagogy:

- The teacher will focus more practice than discussing grammar in the classroom. Understanding of the nuances of grammar should be developed through exercises.
- Besides, teacher may also use video clips or any other audio-visual material to compliment regular classroom teaching.

Recommended Readings:

1. Murphy, Raymond. *Intermediate English Grammar*. Cambridge University Press, 1999.
2. Thomson, A.J. and Martinet, A.V. *A Practical English Grammar*. OUP, 1986.
3. Wren, P.C.& Martin. *English Grammar & Composition*. Blackie ELT Books, 1935.

Examination Scheme:

Internal Evaluation

1. **Internal Evaluation** will be based on assignments/presentations during the semester and oral examination to test students' capability to speak correctly.
2. **Oral Examination** shall be conducted by the teacher at the end of the semester.

External Evaluation

1. In Part I, there will be **25 grammar/language-based questions** in total from Unit-I to

Unit-III. Each question will carry **2** marks.

2. In Part II, there will be one paragraph carrying 10 marks. Students will be asked to edit to test their understanding of grammar items taught in this course.

French- III

Nature of the Course: AEC

Course Title: French- III

Course Code: BAENG219

Credits: 2 (L 2)

Mode of Exam: UES

Total Marks: 100 (40 + 60)

Course Objectives:

To impart basic skills of the French language; to enable students to read, write and speak French at a basic level.

Course Outcomes (COs): After the completion of the course, students will

CO1 (Knowledge): know the basic grammar and sounds of the French language;

CO2 (Understanding): understand the basics of the French language and develop their speaking skills in French;

CO3 (Communication): be able to converse in French in day-to-day situations.

Course Content

Unit- I: L'heure La temps

Les Pays, Les Nombres

Les adjectifs possessifs: Les verbes en- er (1er groupe) au présent ; Quelle heure est-il/À quelle heure? Expressions de temps ; Le verbe sortir au présent (Unit 10-12 book 1)

Unit- II: Décrire La maison Décrire La Famili

parler de famille - Les verbes en- er au présent; Les verbes en- ir au présent ; Les verbes en- re au présent ; Quelques Prépositions de localisation (1)

La salon la salle à manger la cuisine - Les mois de l'année ; Quelques Prépositions de; localisation (suite) ; Le verbe être au présent et au passé Unit (15-17, Book 2)

Unit- III: Les saisons, les mesures- L'âge

Décrire La maison Décrire La Famille

Writing Expression and comprehension pertaining to Unit 4 and Unit 5 in Communicative Grammar

Unit- IV: La salon la salle à manger la cuisine

Writing Expression and comprehension pertaining to Unit 6 in Communicative Grammar

Pedagogy:

- Focus would be more on practice than discussing grammar in the classroom.
- Understanding of the language should be developed through exercises.
- The teacher should design exercises in a manner to cover prescribed aspects of the French language.
- Besides, teacher may also use video clips or any other audio-visual material to enhance teaching-learning environment of the class.

Recommended Readings:

1. G. Mauger. *cours de Langue et de Civilisation Françaises1 & 2*, Goyal Publishers & Distributors Ltd., 2013.
2. Mahitha, Ranjit & Monica Singh. *Apprenons Le Français Methode de francais ---01 & 02*. Alliance Francaise de Delhi, New Saraswati House(India) Pvt. Ltd., 2019.
3. French visual phrase book, *D K French visual phrase book*. D. K. Publisher, 2011.
4. Capelle, Guy and Noelle Gidon. *Cahier d' Excercises 1 (Le Nouvel Expaces Cahier d' Excercises)*. Hachette, 1995.

Examination Scheme:**Internal Evaluation**

1. **Internal Evaluation** will be based on assignments/presentations during the semester and oral examination to test students' capability to speak correctly.
2. **Oral Examination** shall be conducted by the teacher at the end of the semester.

External Evaluation

1. In Part I, there will be **25 grammar/language-based questions** in total from Unit-I to Unit-III. Each question will carry **2** marks.
2. In Part II, there will be one paragraph carrying 10 marks. Students will be asked to edit to test their understanding of grammar items taught in this course.

German- III

Nature of the Course: AEC
Course Title: German- III
Course Code: BAENG221
Credits: 2 (L 2)

Mode of Exam: UES

Total Marks: 100 (40 + 60)

Course Objectives: This course is designed for those who want to learn part-time German as a foreign language. The course corresponds to A1 level of the Common European Framework of Reference for Languages (CEFR).

Course Outcomes: After the completion of the course, students will

CO1 (Understanding): understand and use familiar, everyday expressions and simple sentences in German;

CO2 (Knowledge): know German alphabet and the basics of the German language;

CO3 (Communication): be able to introduce themselves and others as well as ask simple questions in German. They should be familiar with some important cities in Germany, Austria and Switzerland.

Course Content

Unit- I: Kontake

U nit-II: Meine Wohnung

Unit- III: Alles Arbeit

Unit-IV: Assignments and Practice Sessions

Pedagogy:

- Focus would be more on practice than discussing grammar in the classroom.
- Understanding of the language should be developed through exercises.
- The teacher should design exercises in a manner to cover prescribed aspects of the German language.
- Besides, teacher may also use video clips or any other audio-visual material to enhance teaching-learning environment of the class.

Recommended Readings:

1. Durell, M. Kartin Kohl and Gudrun Loftus. *Essential German Grammar*. Arnold, 2002.
2. ---. *Hammer's German Grammar and Usage*. Routledge, 1997.
3. Dengler, Stefanie, et al. *Netzwerkneu A1*. Goyal Publishers & Distributors, 2021.

However, teaching will not be restricted to the textbook and additional material will also be provided to the learners. The students will also be introduced to audio-visual exercises, films etc. suitable for beginners.

Examination Scheme:

Internal Evaluation

1. **Internal Evaluation** will be based on assignments/presentations during the semester and oral examination to test students' capability to speak correctly.
2. **Oral Examination** shall be conducted by the teacher at the end of the semester.

External Evaluation

1. In Part I, there will be **25 grammar/language-based questions** in total from Unit-I to Unit-III. Each question will carry **2** marks.
2. In Part II, there will be one paragraph carrying 10 marks. Students will be asked to edit to test their understanding of grammar items taught in this course.

Value-Added Courses (VAC)
University School of Environment Management
(USEM)

UNIVERSAL HUMAN VALUES: UNDERSTANDING HARMONY

Paper Code -UHV – 201 (VAC/NUES)

L-02

Credits-02

Course Objectives

CO ₁	To develop sustainable harmony within self, family, fellow human beings, society, global communities, and nature
CO ₂	To critically reflect and respect our existence as humans
CO ₃	To develop commitment and courage of conviction.
CO ₄	To be able to work as a team for a socially relevant cause.

Course Contents

UNIT 1: Introduction to Value Education

Are values absolute or relative?, Need for Universal Human Values, appreciating diversity as laid down in the constitution - lingual, sociocultural, regional or religious, Pluralism, multiculturalism and secularism

UNIT 2: Harmony in Human-Human Relationships

Harmonious coexistence within self, thoughts (mental process) & action, Harmonious coexistence of self with other selves, fostering concepts like difference, respect, trust and coexistence.

UNIT 3: Harmony in Human - Nature Relationship

Harmony with Nature, Sustainable existence and Sustainable Development Goals (SDGs)

UNIT 4: Project or Field-Work/Case Study/Workshop - The students will form teams of 4 to 5 and may carry out **any one** of the above-mentioned activities. The team will present the work done at the end of the semester.

The project may be on socially relevant cause such as: Energy Conservation, Mental health, Gender related, Human Rights, Health Care, Swachta Mission, Biodiversity and Conservation, Financial Literacy, Social Justice/Injustice, Caste/Class based Issues, Law & Society, Literature/Films and Human Values or any other related subject with the approval of course instructor.

OR

A case study analysis may be carried out and presented by the students on any of the topics mentioned above for the project work.

OR

Workshop : The students may attend a workshop of not less than 3 days (in Physical mode) on Human Values and Ethics organized by the AICTE /Institution.

Suggested reading and References:

1. R. R. Gaur, R. Sangal, G. P. Bagaria. A foundation course in Human Values and professional ethics, Excel books, New Delhi. 2019 ISBN-10 9788174467812, ISBN-13 978-8174467812.
2. A.N. Tripathy. Human Values. New Age International Publishers. 2004.
3. Nagraj, Jeevan Vidya ek Parichay, Divya Path Sansthan. Amarkantak, 1999.
4. L. Bajpai, Indian Ethos and Modern Management, New Royal Book Company, Lucknow, Reprinted: 2008 ISBN-10 8185936943, ISBN-13 978-8185936949.
5. Universal human values on Sustainable Development Goals (SDG), Link: https://www.undp.org/sustainable-development-goals?utm_source=EN&utm_medium=GSR&utm_content=US_UNDP_PaidSearch_Brand_English&utm_campaign=CENTRAL&c_src=CENTRAL&c_src2=GSR&gclid=Cj0KCQjAgaGgBhC8ARIsAAyLfEfOe__NvhZgmNwP0jJWiSonxm4KNRi9bca9BHG-202LhHoktQEwQUaAvHHEALw_wcB
6. Text books from NCERT .
7. NBT abridged version of constitution for case studies.
8. Case Study on “Fabricating Data” and other issues can be taken up by the instructor. Case study: <https://onlineethics.org/cases/ethics-science-classroom/overly-ambitious-researchers-fabricating-data>
9. Motilal Shashi . An Alliance Beyond the Human Realm for Ecological Justice in *Ethique-Economique*, Vol..16 Number 1, June 2019 pp.46-56
Motilal, Shashi. “Sustainable Development Goals and Human Moral Obligations: The Ends and Means Relation” *Journal of Global Ethics*. Volume 11, Issue 1 2015 , Online version published on 13 March 2015 Online version available on <http://dx.doi.org/10.1080/17449626.2015.1010096> .ISSN: 1744-9634

Course Expected Outcomes:

CO₁	Students would become more mindful of themselves and their surroundings, handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
CO₂	Students would cultivate critical skills.
CO₃	Students would become sensitive to their commitment towards values, human relationships and society at large.
CO₄	Students will learn from their real-life experience to work as a team towards socially productive causes.