AC No: 22.02.25
Item No: 4.1

SIES (Nerul) College of Arts, Science and Commerce (Autonomous)

Syllabus for Approval

B.SC (Artificial Intelligence)

(WITH EFFECT FROM THE ACADEMIC YEAR 2025-2026)

Sr. No.	Heading	Particulars
1	Title of the Programme	B.Sc. (Artificial Intelligence)
2	Eligibility for admission	HSC in SCIENCE with **Mathematics and Statistics** as one of the subjects or its equivalent
3	Minimum Percentage for admission	50%
4	Passing Marks	40%
5	Semesters	I
6	Level	UG
7	Pattern	3-4 years & 6-8 semesters Choice Based Grading System
8	Status	New
9	To be implemented from	From Academic year 2025-26 in a progressive manner

Date: 4th February, 2025.

Signature:

Dr. Koel Roychoudhury
AC Chairperson

Dr. Sheeja Ravi
Head of the Department

Sri Chandrasekarendra Saraswati Vidyapuram,, Plot I-C, Sector V,
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SIES (Nerul) College of Arts, Science and Commerce

(Autonomous)

(Affiliated to University of Mumbai)
RE-ACCREDITED GRADE "A" BY NAAC (3rd CYCLE)

BOARD OF STUDIES
SYLLABUS FOR
B.Sc. (ARTIFICIAL INTELLIGENCE)

(WITH EFFECT FROM THE ACADEMIC YEAR 2025-2026)

OBJECTIVES OF THE PROGRAMME:

- To develop students to design robust and maintainable solutions for both simple and complex problems using Artificial Intelligence and machine learning.
- To equip students with a solid understanding of mathematics and science, essential for solving real-world problems with Artificial Intelligence technologies.
- To prepare students to analyze requirements and design engineering solutions by applying Artificial Intelligence and machine learning theory.
- To foster competency in Artificial Intelligence/Machine Learning tools and promote collaborative learning through multi-disciplinary projects.
- To ensure adherence to high ethical standards and industry codes of conduct in AI development.
- To equip students to contribute to societal progress through continuous learning and ethical application of emerging Artificial Intelligence technologies.

PROGRAMME OUTCOMES:

- At the end of the program, students will have a strong understanding of Artificial Intelligence and machine learning algorithms, techniques, and tools, enabling them to develop effective and efficient AI-driven solutions.
- Students will possess practical experience in implementing Artificial Intelligence and machine learning models through hands-on projects and real-world applications.
- Students will be equipped with the skills to conduct research, innovate, and stay updated with the latest advancements in Artificial Intelligence technologies and methodologies.
- Students will demonstrate an understanding of the ethical implications of Artificial Intelligence technologies and apply responsible practices in developing Artificial Intelligence systems.
- Students will effectively communicate complex Artificial Intelligence concepts and solutions and collaborate in multi-disciplinary teams to achieve project goals.

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NEP Credit Structure for B.SC (ARTIFICIAL INTELLIGENCE)

Semester	Major	Minor	OE (Basket)	VSC, SEC (VSEC)	AEC, VEC, IKS	OJT,FP,CEP,CC, RP	Cum. Cr./ Sem.
I	Introduction to Artificial Intelligence (2+1P credit Fundamental of Programming using Python (2+1P) credit	-	Eco-Shastra (4-credit)	VSC-Descriptive Statistics (2- credit) SEC - Critical Thinking Techniques(2-credit)	AEC-Effective Communication – I (2- credit) VEC- Environmental studies for computer Science (2- credit) IKS- Indian Astronomy (2- credit)	CC- Life Skill I (2- credit)	22
Total of I	6		4	4	6	2	22

SCHEME OF MODULES

SEMESTER I			
Serial No	**Course code**	**Credits**	**Course Name**
I	**Major Department Specific Course (DSC)**		
1	U25AI1MJ01	**02**	**Introduction to Artificial Intelligence**
2	U25AI1MJP01	**01**	**Practical of Introduction to Artificial Intelligence**
1	U25AI1MJ02	**02**	**Fundamentals of Programming using Python**
2	U25AI1MJP02	**01**	**Practical of Fundamentals of Programming using Python**
II	**Open Electives(OE)/ Generic Electives**		
1	U24BE1E01	**04**	**Eco Shastra**
III	**VOCATIONAL COURSE (VC) & SKILL ENHANCEMENT COURSE (SEC)**		
1	U25AI1VSC01	**02**	**Descriptive Statistics**
2	U25AI1SEC01	**02**	**Critical Thinking Techniques**
IV	**ABILITY ENHANCEMENT COURSE(AEC)/VALUE EDUCATION COURSE (VEC) / INDIAN KNOWLEDGE SYSTEM (IKS)**		
1	U24ENG1AEC01 (Rev.25-26)	**02**	**Effective Communication - I**
2	U24CS1VEC01	**02**	**Environmental Studies for Computer Science**
3	U24CS1IKS01	**02**	**Indian Astronomy**
V	**Co-Curricular(CC)(ANY ONE)**		
1	**U24CC1LS01**	**02**	**Life Skills I**
2	U24CC1DLLE01	**02**	**DLLE**
3	**U24CC1NSS01**	**02**	**NSS**
TOTAL CREDITS		**22**	

MAJOR- Introduction to Artificial Intelligence

COURSE CODE: U25AI1MJ01 **COURSE CREDIT: 02**
1 credit – 15 lectures
1 lecture is 60 minutes

Course Objectives:

- Understand the foundations, history, and state of the art of AI.
- Learn about intelligent agents, their environments, and the structure of agents.
- Explore different problem-solving strategies, including uninformed and informed search techniques.

Learning Outcomes:
After successful completion of this course, students would be able to
- Demonstrate knowledge of the foundations and key concepts in the field of AI.
- Analyze and design intelligent agents for specific environments.
- Apply problem-solving techniques and algorithms to find solutions to different types of problems.

Unit	Topics	No. of Lectures
I	**Introduction to AI and Intelligent Agents** **What Is AI:** Foundations, History and State of the Art of AI **Intelligent Agents:** Agents and Environments, Nature of Environments, Structure of Agents.	15
II	**Problem Solving by Searching:** Problem Solving agents, searching for solutions, **Informed Search:** A* search, AO* search, **Uninformed search:** Depth First Search, Breadth First Search, Brand and Bound, Heuristic functions.	15

Textbook(s):

1. Patrick Henry Winston, Artificial Intelligence, Third Edition, Addison-Wesley Publishing Company, 2004.
2. Artificial Intelligence: A Modern Approach, Stuart Russell and Peter Norvig, 3rd Edition, Pearson, 2010.
3. Nils J. Nilsson, Principles of Artificial Intelligence
4. Artificial Intelligence by Dr. Rajeshri Shinkar, Dr. Rajendra Patil, Ms. Mitali Shewale, University of Mumbai.

Additional Reference(s):

1. Artificial Intelligence: Foundations of Computational Agents, David L Poole,Alan K. Mackworth, 2nd Edition, Cambridge University Press ,2017.
2. Artificial Intelligence, Kevin Knight and Elaine Rich, 3rd Edition, 2017 3) The Elements of Statistical Learning, Trevor Hastie, Robert Tibshirani and Jerome Friedman, Springer, 2013

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MAJOR- Practical of Introduction to Artificial Intelligence

COURSE CODE: U25AI1MJP01 **COURSE CREDIT: 01**

1 credit – 2 lectures **1 lecture is 60 minutes**

Sr. No	List of Practical
1	Breadth First Search · Implement the Breadth First Search algorithm to solve a given problem.
2	Depth First Search · Implement the Breadth First Search algorithm to solve a given problem.
3	Iterative Depth First Search · Implement the Iterative Depth First Search algorithm to solve the same problem.
4	A* Search · Implement the A* Search algorithm for solving a pathfinding problem.
5	Recursive Best-First Search · Implement the Recursive Best-First Search algorithm for the same problem.
6	Decision Tree Learning · Implement the Decision Tree Learning algorithm to build a decision tree for a given dataset.
7	Visualization and interpretation of decision tree · Evaluate the accuracy and effectiveness of the decision tree on test data. · Visualize and interpret the generated decision tree.
8	Support Vector Machines (SVM) · Implement the SVM algorithm for binary classification.
9	Support Vector Machines (SVM) · Train an SVM model using a given dataset and optimize its parameters.
10	Support Vector Machines (SVM) · Evaluate the performance of the SVM model on test data and analyze the results.
11	Naive Bayes' Classifier · Implement the Naive Bayes' algorithm for classification.
12	Naive Bayes' Classifier · Train a Naive Bayes' model using a given dataset and calculate class probabilities.
13	K-Nearest Neighbors (K-NN) · Implement the K-NN algorithm for classification or regression.

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MAJOR- **Fundamentals of Programming using Python**

COURSE CODE : U25AI1MJ02 **COURSE CREDIT: 02**

1 credit - 15 lectures

1 lecture is 60 minutes

Course Objectives:

- To learn how to write algorithms and flowchart.
- To explore Python programming and understand components of Python Program to design and write program applications.
- To learn loops and decision statement, functions and strings, list, tuple and dictionaries in Python.

Course Outcomes:

After successful completion of this course, students would be able to:

- Ability to write algorithms and flowchart
- Ability to store, manipulate and access data in Python and decision statement in Python also how to write functions and pass arguments in Python.

Unit	Syllabus	No. of lectures
01	**Introduction to Algorithms and Flowchart:** Expressing Algorithms, Benefits of Using Algorithms, General Approaches in Algorithm Design. Advantages of Using Flowcharts ,Limitations of Using Flowcharts , When to Use Flowcharts, Flowchart Symbols & Guidelines, Types of Flowcharts **Introduction:** The Python Programming Language, History, features, Installing Python, Running Python program, Debugging : Syntax Errors, Runtime Errors, Semantic Errors, Experimental Debugging, Formal and Natural Languages, The Difference Between Brackets, Braces, and Parentheses, **Variables and Expressions:** Values and Types, Variables, Variable Names and Keywords, Type conversion, Operators and Operands, Expressions, Interactive Mode and Script Mode, Order of Operations. **Conditional Statements:** if, if-else, nested if –else **Looping:** for, while, nested loops **Control statements:** Terminating loops, skipping specific conditions	15

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02	**Functions:** Function Calls, Type Conversion Functions, Math Functions, Composition, Adding New Functions, Definitions and Uses, Flow of Execution, Parameters and Arguments, Variables and Parameters Are Local, Stack Diagrams, Fruitful Functions and Void Functions, Why Functions? Importing with from, Return Values, Incremental Development, Composition, Boolean Functions, More Recursion, Leap of Faith, Checking Types **Strings:** A String Is a Sequence, Traversal with a for Loop, String Slices, Strings Are Immutable, Searching, Looping and Counting, String Methods, The in Operator, String Comparison, String Operations. **Lists:** Values and Accessing Elements, Lists are mutable, traversing a List, Deleting elements from List, Built-in List Operators, Concatenation, Repetition, In Operator, Built-in List functions and methods **Tuples and Dictionaries:** Tuples, Accessing values in Tuples, Tuple Assignment, Tuples as return values, Variable-length argument tuples, Basic tuples operations, Concatenation, Repetition, in Operator, Iteration, Built-in Tuple Functions Creating a Dictionary, Accessing Values in a dictionary, Updating Dictionary, Deleting Elements from Dictionary, Properties of Dictionary keys, Operations in Dictionary, Built-In Dictionary Functions, Built-in Dictionary Methods	15

References:

Textbook:

1. Introduction to Python Programming by Dr. Trupti S Wani, Mrs, Sonali Sambre, Ms. Beena Kapadiaya , Sheth Publication.
2. Python Programming by Kiran Gurbani and Ashwin Mehta, Himalaya Publications.

Additional References:

1. Introduction to Computing and Problem Solving Using Python by E Balagurusamy, Mc Graw Hill.
2. Programming and Problem solving with Python by Ashok Namdev Kamthane and Amit Ashok Kamthane, Mc Graw Hill.

MAJOR- Practical of Fundamentals of Programming using Python

COURSE CODE : U25AI1MJP02 **COURSE CREDIT: 01**

1 credit - 2 lectures

1 lecture is 60 minutes

Sr. No.	List of Practicals
1	Write the program for the following: a. Write a program to find the average of five numbers. b. Write a program to swap the values of variables.
2	Write the program for the following: a. Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old. b. Enter the number from the user and depending on whether the number is even or odd, print out an appropriate message to the user.
3	Write the program for the following: a. Write a program to check the number is prime number or not. b. Write a program to print all prime numbers in an interval.
4	Write the program for the following: a. Write a program to find the factorial of a number. b. Write a program to print sum of first ten natural numbers.
5	Write the program for the following: a. Write a program to find LCM and HCF. b. Write a function to check the input value is Armstrong.
6	Write the program for the following: a. Write the function to check for Palindrome. b. Write a program to generate the Fibonacci series.
7	Write the program for the following: a. Write a recursive function to print the factorial for a given number. b. Write a function that takes a character (i.e. a string of length 1) and returns True if it is a vowel, False otherwise.

8	Write the program for the following: a. Define a function that computes the length of a given list or string. b. Define a procedure histogram() that takes a list of integers and prints a histogram to the screen. For example, histogram([4, 9, 7]) should print the following: **** ********* *******
9	Write the program for the following: a. A pangram is a sentence that contains all the letters of the English alphabet at least once, for example: The quick brown fox jumps over the lazy dog. Your task here is to write a function to check a sentence to see if it is a pangram or not. b. Take a list, say for example this one: a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89] and write a program that prints out all the elements of the list that are less than 5.
10	Write the program for the following: a. Write a program that takes two lists and returns True if they have at least one common member. b. Write a Python program to print a specified list after removing the 0th, 2nd, 4th and 5th elements.
11	Write the program for the following: a. Write a Python program to clone or copy a list b. Write a Python script to sort (ascending and descending) a dictionary by value.
12	Write the program for the following: a. Write a Python script to concatenate following dictionaries to create a new one. Sample Dictionary : dic1={1:10, 2:20} dic2={3:30, 4:40} dic3={5:50,6:60} Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60} b. Write a Python program to sum all the items in a dictionary.
13	Write a python program to make a simple calculator.

VSC- Descriptive Statistics

COURSE CODE : U25AI1VSC01 **COURSE CREDIT: 02**

1 Credit – 15 Lectures **1 Lecture is 60 minutes**

Course Objectives:

- To develop the learner's ability to deal with different types of data and to enable the use of different measures of central tendency and dispersion wherever relevant.
- To make learner enable to find the correlation between different variables and further apply the regression analysis to find the exact relation between them and develop ability to analyze statistical data through R software.

Course Outcomes:

- Ability to organize, manage and present data.
- Ability to analyse Statistical data using measures of central tendency and dispersion.
- Study the relationship between variables using techniques of correlation and regression.

Unit	Syllabus	No. of Lectures
I	**Data Types and Data Presentation**: Data types: Attribute, Variable, Discrete and Continuous variable, Univariate and Bivariate distribution. Types of Characteristics, Different types of scales: nominal, ordinal, interval and ratio. **Data presentation**: Frequency distribution, Frequency curve and polygon, Histogram, Ogive curves Stem-leaf representation. **Measures of Central tendency**: Concept of average/central tendency, characteristics of good measure of central tendency. Arithmetic Mean (A.M.), Median, Mode, Combined mean. Partition Values: Quartiles, Deciles and Percentiles. Representing mode, median and quartiles using graphs. **Measures dispersion:** Range, Semi-interquartile range, Quartile deviation, Standard deviation, Variance. Coefficient of range, Coefficient of quartile deviation and Coefficient of variation (C.V.)	15
II	**Moments**: Concept of Moments, Raw moments, Central moments, Absolute moments, Relation between raw and central moments. **Measures of Skewness and Kurtosis**: Concept of Skewness and Kurtosis, measures based on moments, quartiles (Karl Pearson's and Bowleys measure of skewness) **Correlation**: Measure of Correlation: Scatter diagram and interpretation; Karl Pearson's coefficient of correlation (r), Spearman's rank correlation coefficient: Definition, examples of with and without repetition. **Regression:** Concept of dependent (response) and independent (predictor) variables, concept of regression, Types and prediction, difference between correlation and regression, Relation between correlation and regression	15

References:

1. Goon, A. M., Gupta, M. K. and Dasgupta, B. (1983). Fundamentals of Statistics, Vol. 1, Sixth Revised Edition, The World Press Pvt. Ltd, Calcutta.
2. Gupta, S.C. and Kapoor, V.K. (1987): Fundamentals of Mathematical Statistics, S. Chand and Sons, New Delhi

Additional References:

1. Sarma, K. V. S. (2001). Statistics Made it Simple: Do it yourself on PC. Prentice Hall of India, New Delhi.

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2. Agarwal, B. L. (2003). Programmed Statistics, Second Edition, New Age International Publishers, New Delhi.
3. Purohit, S. G., Gore S. D., Deshmukh S. R. (2008). Statistics Using R, Narosa Publishing House, New Delhi.
4. Schaum's Outline Of Theory And Problems Of Beginning Statistics, Larry J. Stephens, Schaum's Outline Series McGraw-Hill. 2009

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SEC- Critical Thinking Techniques

COURSE CODE : U25AI1SEC01 **COURSE CREDIT: 02**

1 Credit – 15 Lectures **1 Lecture is 60 minutes**

Course Objectives:

- To Develop Computational Thinking Skills.
- To Apply Logical and Algorithmic Reasoning.

Course Outcomes:

After successful completion of this course, students would be able to

- Apply critical thinking techniques to solve computing problems.
- Evaluate algorithmic efficiency and data-driven arguments

Unit	Syllabus	No. of Lectures
1	Foundations of Critical Thinking: Introduction to Critical Thinking in Computing, Logical Reasoning & Deductive vs. Inductive Thinking, Common Logical Fallacies in Technology and Programming, Bias in Algorithms and Decision-Making Problem-Solving Strategies: Computational Thinking: Decomposition, Pattern Recognition, Abstraction, and Algorithms, Debugging as a Critical Thinking Exercise, Heuristics vs. Formal Methods in Problem-Solving, Case Studies in Complex Problem-Solving (e.g., AI bias, software failures)	15
2	Algorithms and Logic: Algorithmic Thinking and Pseudocode, Computational Complexity & Trade-offs, Evaluating Algorithm Efficiency: Big-O Notation, Logical Proofs and Boolean Algebra Data-Driven Decision Making: Understanding Data Bias and Misinterpretation, Ethical Implications of AI and Machine Learning, Data Science and Critical Thinking: Making Sense of Information, Case Study: How Misinformation Spreads in Digital Systems.	15

Textbooks:

1. "How to Solve It" – George Pólya

2. **"The Art of Problem Solving, Vol. 1: The Basics" – Richard Rusczyk**

Additional References:

1. "Introduction to the Design and Analysis of Algorithms" – Anany Levitin

AEC- EFFECTIVE COMMUNICATION -1

COURSE CODE : U24ENG1AEC01 (Rev.25-26) **COURSE CREDIT: 02**

1 credit - 15 lectures

1 lecture is 60 minutes

Course Objectives:

1. To develop an awareness among learners about the complexity of communication process.

2. To develop effective letter writing skills among students with reference to prescribed layouts and formats.

3. To demonstrate the effective use of communication skills applicable for the employability in present situation.

Module-1 .Theory of Communication		**(Total 10 Lectures)**
1.	Introduction and Process of Communication	01
2.	Channels of Communication: Formal /Informal, Vertical, Downward, Upward, Horizontal, Grapevine	03
3.	Methods of Communication: Verbal/Nonverbal	02
4.	Barriers in Communication: Physical, Linguistic, Psychological, Sociocultural, Mechanical	03
5.	Modern Modes of Communication	01
Module-2.Business Correspondence -1		**(Total 10 Lectures)**
1.	Theory of Business Letter Writing,7 Cs of Writing	01
2	Format of Letter Writing, Full Block Format, Modified Block Format, Parts of Letter : Major Parts/Minor Parts	02

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3.	Personnel Correspondence: Job Application Letter, Resume, Job Acceptance Letter, Resignation Letter, Recommendation Letter.	05
4.	Professional E mail Writing: Format, Principles	02
Module-3.Language and Writing Skills		**(Total 10 Lectures)**
1.	Paragraph Writing: Developing an idea, Use of appropriate linking devices, Interpretation of Data, Composition on given situation	05
2	Listening Comprehension, Public Speaking Skills, ICT Enabled Communication, Appropriate use of Non-Verbal Communication, Multilingual Competency.	05

Reference Books:

1. A Handbook of Commercial Correspondence by Ashley, A, Oxford University Press, 1992.
2. Basic Business Communication: Skills for Empowering the Internet Generation by Raymond Lesikar and Marie Flatley,9th Edition, Tata McGraw Hill, New Delhi,2002.
3. Business Communication by D Chaturvedi and Mukesh Chaturvedi, Third Edition, Pearson Publications Ltd,2013.
4. Business Communication by Meenakshi Raman and Prakash Singh ,Oxford University Press,2007.
5. Business Communication Strategies by Monippally, Matthukutty, M,Tata McGraw Hill New Delhi,2001.
6. Effective Business Communication by Herta Murphy, Herbert Hildebrandt,,Jane Thomas,Mc Graw Hill Education,2009.
7. Effective Communication by Balan K.R. and Rayadu C.S., Beacon Publication, New Delhi, 1996.
8. Effective Technical Communication by M.Ashraf, Rizvi,Mc Graw Hill Publications,2006.

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IKS- Indian Astronomy

COURSE CODE : U24CS1IKS01 **COURSE CREDIT: 02**

1 credit - 15 Hours

1 lecture is 60 minutes

Course Objectives:

1. To develop an awareness among learners about the Indian Astronomy.
2. To make learners proficient in the concept, technicalities and computational procedures developed by Indian mathematician and astronomers.

Course Outcomes:

1. To understands basics of Indian Astronomy.
2. To Understand Coordinate Systems, Rasi & Nakshatra systems.

Unit	SYLLABUS	No of Lectures
I	Indian Knowledge System : Importance of Ancient Knowledge, Defining Indian Knowledge System, Need of IKS, The IKS Corpus, Caturdasa-Vidyasthana, Historicity of IKS, Unique aspects of IKS, Nuances of Oral Tradition, Sutras, Encryptions	15
II	Astronomy: Unique Aspects, Historical Development of Astronomy in India, The celestial coordinate system, Elements of the Indian Calendar, Notion of years and months, Aryabhatta and Siddhantic tradition, Panchanga- The Indian Calendar System, Astronomical Instruments, Jantar Mantar of Raja Jai Singh Sawai	15

Reference Books:

1. Indian Astronomy: An Introduction by S Balachandra Rao, University Press
2. Mathematics in Ancient and Medieval India by A K Bag, Orientilia Delhi.

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VEC-Environmental Studies for Computer Science

COURSE CODE : U24CS1VEC01 **COURSE CREDIT: 02**

1 credit - 15 lectures

1 lecture is 60 minutes

Course Objectives:

1. Understand key concepts of environmental studies, ecosystems and natural resources
2. Understand environmental policies and practices
3. Understand the role of communities in environmental management, Use computing effectively by applying concepts of green computing

Course Outcome

1. To understand environmental policies and practices.
2. To develop ethical values towards the environment conservation

Unit	Syllabus	No. of lectures
01	**Introduction** The Multidisciplinary Nature of Environmental Studies, Components of the Environment, Scope and Importance of Environmental Studies, Concept of Sustainability and Sustainable Development. **Ecosystems and Natural Resources** Overview of Ecosystems, Structure and Function of Ecosystems, Energy Flow in Ecosystem, Food Chain, Food Web and Ecological Succession, Case Studies of Ecosystems, Degradation of Ecosystems, Renewable and Non-Renewable Resources, Deforestation, Role of an Individual in the Conservation of Natural Resources.	15
02	**Human Communities and the Environment** Human Population and Growth, Carbon Footprint, Resettlement and Rehabilitation of Project-Affected Persons, Disaster Management, Environmental Movements, Environmental Ethics, Environmental Communication and Public Awareness, Visit to Local Area to Document Environmental Assets. **Green Computing** Overview of Green Computing, Green Computing Efforts, Going Paperless, Power Measurement and Power Reduction, Electronic Waste, Recycling of Electronic Waste, Green Supply Chain, Certifications for Green Computing	15

References:

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1. BharuchaErach, "Textbook of Environmental Studies for Undergraduate Courses", Universities Press
2. "Green Computing", Website:https://mu.ac.in/wp-content/uploads/2021/03/GreenComputing.pdf
3. Hawkins R.E., "Encyclopedia of Indian Natural History", Bombay Natural History Society, Bombay
4. Kaushik A., "Environmental Studies", New Age International Publication, New Delhi
5. Jadhav, H &Bhosale, "Environmental Protection and Laws", Himalaya Pub. House, Delhi

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Life Skills- 1

COURSE CODE: U24CC1LS01 **COURSE CREDIT: 02**

1 credit - 15 lectures

1 lecture is 60 minutes.

Course Objectives:

- To enhance one's ability to be fully self- aware by helping oneself to overcome all fears and insecurities and to grow fully from inside out and outside in.
- To increase one's knowledge and awareness of emotional competency and emotional intelligence at place of study/work
- To develop interpersonal skills and adopt good leadership behavior foe empowerment of self and others
- Provide the opportunity for realizing self-potential through practical experience.

Course outcomes:

After completion of the course, learners would be able to:

- Demonstrate a set of practical skills such as self-management.
- Practice active listening and persuasion.
- Adopt good leadership practice.
- Realize their potential as human beings and conduct themselves properly in the ways of the world.

Module No	Syllabus	No. of Hours	
1	**A) Self -Awareness-** Self -Concept, Self Esteem, Techniques of Self- awareness- SWOT analysis, Johari Window	4	10
	B) Self -Management- Mindfulness, Innovation, Adaptability, Agility, trustworthiness, Self - Motivation, Emotional Quotient	6	
2	**A) Listening as an Active Skill-** Types of listeners, Techniques of Effective Listening Listening and Comprehension Probing Questions Barriers to Listening	6	10
	B) Art of Persuasion- Importance, Techniques	4	
3	**A) Creative Problem Solving-** Six Thinking hats, Mind Mapping, Forced onnections	6	10
	B) Leadership Spiritual leadership, Servant leadership, Value driven authentic leadership	4	

References:

Goleman, D, Working with Emotional Intelligence. Bloosbury Publication, 1998
Ghosh, S., Universal Values: As reflected in literature. Ramakrishna Mission Institute of Culture, 2004 Wadkar, A. J, Life Skills for success.SAGE, 2016

Pedagogy- Practical session / experiential learning / Demonstration /Biographies /Reflection Journal

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SCHEME OF EXAMINATION
Total Marks: 50
Continuous Evaluation pattern.

Evaluation Criteria	Marks
Prepare a report/presentation/movie/video	10
Roleplay /Discussions /Tests /Projects /Assignments	10
Class Participation	10
Reflective journal evaluation	20
Total	**50**

DLLE

COURSE CODE: U24CC1DLLE01 COURSE CREDIT: 02

1 credit - 15 lectures

1 lecture is 60 minutes.

Course Outcome

1. Students will acquire knowledge on the structure of DLLE.
2. It will enable students to connect and understand the social realities and work for social welfare. It would help students to enhance leadership skills and apply them in their careers.
3. Students will be more aware of the practicality of real life and can face challenges in a better way and will be able to connect to the unreached section of society and help them

Learning outcome:

1. Learners will understand the structure and working of DLLE.
2. Students will connect to the people in society and work for social welfare.
3. Students will gain experience to work in society on various social aspects.

Unit No	Topic	No of Lectures
Unit - 1	• Introduction to DLLE • Aim & Objectives of DLLE • The Extension Dimension (Reach to Unreached) • Importance of Extension and Community work services in NGOs and the society • Role of Extension Teacher, Student Manager and Volunteers • Understanding community-related issues around the region and developing a sensitive approach towards society • Engage in community partnership practices and provide leadership in promoting changes to improve community well-being, Community engagement, and leadership	15

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Unit - 2	Participation in community-based activities for the following Campaign Anna Poorna Yojna /Population Education/Career Guidance / Consumer Guidance/ Environmental Education/ Civic Education in the form of Street play/ Seminar/ Poster competition/ Essay writing/ Creative Writing competition/ Elocution, Discussion/ Rally/ Start-up business ideas & Presentations/ Interviews/ survey/ Waste collection drive/ Social & environmental awareness campaign/ Cleanliness drive/. Literacy Awareness/ Beach Cleaning/ Tree plantation/ Forest conservation/ Mental Health and Hygiene/ Yoga Meditation. Nutrition and Diet/ Field- Visit to different NGO's and Industries	15

Evaluation Pattern of 50 marks:
Continuous evaluation pattern.

Evaluation Criteria	Marks
Participation in social activity	10
Field visit/ community visit and report	10
Essay/ assignment /poster and report	10
Test/discussion/presentation and viva	10
Attendance in seminar /workshop & Training session	10
Total	50

References :

- https://www.mudlle.ac.in

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NSS

Course Code: U24CC1NSS01 **Course Type: Co-curricular**

Total Lectures per week:2 Credits: 2

Course Objectives:

The syllabus is aimed to achieve the following objectives:

1. To understand the Working, Framework and Contribution of NSS.
2. To Concept of Social Justice and its Importance
3. To understand themselves in relation to their community.
4. To identify the needs and problems of the community and involve them in problem-solving
5. To develop among themselves a sense of social and civic responsibility.
6. To utilize their knowledge in finding practical solutions to individual and community problems.

Learning Outcome:

The learners will be able to:

1. To understand Structural framework of NSS from National Level to College Level
2. Define Social Justice and how it helps the community
3. Enabling the students to contribute towards development of Community
4. Get involved in community betterment and active problem solving
5. Better Sense of social and civic responsibility. Have a better sense of Reduce, Recycle and Reuse
6. Collaborate and Work towards Solving Individual and Community Problems.

Unit No.	Topic	No. of Lectures required
Unit-I	**Introduction to National Service Scheme (NSS)** • Formation and development of NSS in India • Structural framework of NSS from National Level to College Level • Objectives of NSS • Symbol and Moto of NSS and its meaning • Basic Social Issues in India (Family System, Division of labour, Cast System in India, Gender Issues, Regional Imbalance) **Introduction to Social justice** Social Justice – the Concept and its features, Contribution for Social Justice – Mahatma Jyotiba Phule, Dr. Babasaheb Ambedkar, Shahu Maharaj, Chhatrapati Shivaji Maharaj, Savitribai Phule.	15
Unit-II	**Suggested Projects:** • Environment awareness – Waste management & segregation, Reduce, Reuse & Recycle, • Organic waste management by composting (maintenance of compost project) • Volunteering at study centers managed by Stree Mukti Sanghatana	15
	Total Lectures	**30**

The scheme of Examination shall be divided as follows.

- **Continuous Evaluation Pattern**

Description	Marks
30 hours activity related work such as · Attending lectures/ training sessions (10 Marks) · Field work & Maintenance of work record (25)	35
Project Report	5

Viva-voce by faculty in charge and attendance	10
Total	**50**

References:

1. National Service Scheme Manual (Revised) Government of India, Ministry of Youth Affairs and Sports, New Delhi
2. National Service Scheme Manual University of Mumbai
3. National Service Scheme Manual for NSS District Coordinators National Service Scheme Cell, Dept. of Higher and Technical Education, Mantralaya
4. Rashtriya Seva Yojana Sankalpana Prof. Dr. Sankey Chakane, Dr. Pramod Diamond Publication, Pune
5. Annual Report of National Service Scheme (NSS) Dept. of Higher and Technical Education Mantralaya. Dept. of Higher and Technical Education Mantralaya.
6. Training Programme on National Programme scheme, TISS.
7. Orientation Courses for N.S.S. Programme officers, TISS.
8. Social Problems in India, Ram Ahuja.
9. National Service Scheme in India : A Case Study of Karnataka, M. B. Dishad, Trust Publications, 2001
10. http://www.thebetterindia.com/140/national-service-scheme-nss/
11. http://en.wikipedia.org/wiki/national-service-scheme
12. http://nss.nic.in/adminstruct
13. http://nss.nic.in/propexpan
14. http://nss.nic.in
15. http://socialworkne

ss.org/about.html

SCHEME OF THEORY and PRACTICALS EXAMINATION OF MAJOR

SCHEME OF EXAMINATION

I. FOR MAJOR PAPERS WITH 3 CREDITS

The scheme of examination shall be divided into two parts:

- Internal assessment 40% i.e. 20 marks
- Semester end examination 60% i.e. 30 marks

(A) Internal Assessment 20 marks

Description	Marks
Internal test of 10 marks Multiple choice questions- 10 marks	10
Presentation/ case studies/ Poster making/ Quiz/ Role Play/ Subject Specific Activities	5

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Attendance and class Behaviour	5
Total	20

(B) Semester end examination 30 marks

PAPER PATTERN

Duration : 1 hours

Total Marks: 30

All questions are compulsory

Question	Based on	Options	Marks
1	Unit 1	A & B or P & Q	10
2	Unit 2	A & B or P & Q	10
3	Unit 1,2	A & B or P & Q	10
Total			30

Note: 1. Q.1,2 & 3 – 10 marks questions may be divided into sub questions if required.

Passing criteria: Minimum 40% Internal (8 out of 40) and 40% (12 out of 30) in semester end examination.

SCHEME OF PRACTICAL EXAMINATION

I. FOR MAJOR PAPERS

The scheme of examination shall be

- Practical assessment carries 50 marks: 40 marks + 05 marks (journal) + 05 marlks (viva)
- Minimum 75 % practical are required to be completed and written in the journal

(Certified Journal is compulsory for appearing at the time of Practical Exam)

(A) Practical Assessment 50 marks

Description	Marks
Q.1 Two questions of practical's (20 marks each)	40
Journal	5
Viva	5

Passing criteria: Minimum 40% i.e. 20 out of 50 Marks

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SCHEME OF THEORY and PRACTICALS EXAMINATION(VSC/AEC/VEC/SEC/IKS)

The scheme of examination shall be divided into two parts:

- **Internal assessment 40% i.e. 20 marks**
- **Semester end examination 60% i.e. 30 marks**

(A) Internal Assessment 20 marks

Description	**Marks**
Internal tests of 10 marks each Q.1 Multiple choice Questions/True or False - 10 Marks	10
One Project and Viva voce/Presentation/Case studies	5
Attendance and Class behavior	5
Total	**20**

(B) Semester end examination 30 marks PAPER PATTERN

Duration: 1 hours

Total Marks: 30

Description	**Based on**	**Marks**
Q.1 A) Descriptive Question OR B) Short Notes 2 out of 3 (5 Marks each)	Unit 1	10
Q.2 A) Descriptive Question OR B) Short Notes 2 out of 3 (5 Marks each)	Unit 2	10
Q.3 A) Descriptive Question OR B) Short Notes 2 out of 3 (5 Marks each)	Unit 3	10

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Note:

1. Q.1, 2, 3 may be divided into sub questions if required.
2. Q.3 May include theory (short notes) /Case Study in one of the options.

- **Semester end examination 30 marks PAPER PATTERN**
- **Passing criteria: Minimum 40% in Internal (08 out of 20) and 40% (12 out of 30) in semester end examination.**

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