



MIS INTERNATIONAL SCHOOL

Yearly Planner (2024-25)

Grade: 11

Subject - English

Subject Incharge's name: Ms. Shreelekha Chitnis

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|--|---|--|----------------|
| June | The Portrait of a lady | Identify different expressions in the text and infer their meaning from the context. | Write a character sketch highlighting the divine qualities of author's grandma. Reflect on the reasons for the growing isolation of elders in families. Create a self – composed poem. Recapitulate the theme, events, characteristic traits, concept of the lesson through an activity. | 4 |
| | The Summer of the Beautiful White Horse | Apply the literal, interpretative and critical level of comprehending. Analyze the character, organize and present ideas coherently. | | |
| | Poster Making | Comprehend an effective Poster making as a tool of Visual Communication | | 4 |
| June | | | | |

| | Gap Filling Editing Tasks | (Tenses, clauses) | | |
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| July | A Photograph | To encourage the students to appreciate poetry and read aloud with proper intonation to prepare the students for poetic forms and adept them with the figures of speech, rhyme and rhythm | Group discussion, interactive and peer assessment. | 3 |
| | Notice Writing (Writing Skills) | Groups would be formed according to the range of Learners and distributed the role of 5 Ws and frame a notice on the subject given. | Student participation is invited in fixing the importance of the title 'The Address'. | |
| | The Address | To facilitate making connections between similar situations in different storylines/life experiences | Students could explore the importance of having a temporary/permanent address. | 4 |
| | We are not Afraid to Die... | To allow a problem solving: identifying the problem | The facilitator will draw the student's attention to the topic by Asking questions like : <ul style="list-style-type: none"> • What is the meaning of dreams? • Are all dreams achievable? | |

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| | <p>The Laburnum Top</p> <p>Discovering Tut..... The Saga Continues</p> | <p>To interpret the poem by relating the theme to the present-day context</p> <p>Understand, enjoy and appreciate a factual text understand the meaning and usage of phrases like resurrection, circumvented, computed Tomography, scudded across etc iii) understand advancement in technology know about Egyptian belief of Mummification</p> | <p>Draw a flowchart to draw King Tut's Family line and their description</p> | |
| <p>August</p> <p>August</p> <p>नक्कल कर</p> | <p>The Voice of the Rain</p> <p>Mother's Day</p> | <p>The students would be able to grasp the theme and meaning of the poem.</p> <p>i) understand the struggles and sacrifices of parents and to draw inspiration from them. ii) strengthen the family bonding with sharing and solving problem. Develop knowledge and purpose of writing advertisements.</p> | <p>Group work of 3 on poetry writing on the wind, sun, moon or snow- highlighting the pride in their narration.</p> <p>Mother works from morning till night catering to the needs of everyone. Do we ever realize that she too is a human being and needs rest? Share your views about the role of mother in your life.</p> | |

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| | <p>Note Making & Summarizing</p> <p>Revision for half yearly exams</p> | <p>To be able to comprehend and use grammatical organization for quantifying and sentence completion</p> | | |
| <p>October</p> | <p>Re- arranging Jumbled words and Phrases</p> | <p>To be able to comprehend and use grammatical organization for quantifying and sentence completion.</p> | | |

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| | Birth | To facilitate making Connections between similar situations in different storylines/life experiences | In the group of two discuss the importance of job satisfaction. | |
| November | Father to Son | The students will be able to i) Comprehend and appreciate poetry. ii) Learn new words. iii) Enhance understanding of literary devices. iv) Read with proper intonation and stress. | The teacher will keep on throwing statements related to reasons, consequences and ways to find solutions to the problem. | |
| December | The Tale of Melon City | To read and recognize the purpose of Pre-activities: Self-awareness Team work To enable the students to economy and the | Classroom discussions based on - Examples of a kings and rulers. ii) Loud reading of the poem with voice | |



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| | | <p>hidden satire, irony and pun in the nuances - to build up didactics on the role of democracy in a state identify the figures of speech and the rhyming scheme.</p> <p>iv) enhance their vocabulary.</p> <p>v) appreciate the theme and the style of writing of the poet.</p> | intonation and modulation. | |
| January | <p>Silk Road</p> <p>Speech Writing</p> | <p>To identify the important of the Silk Road</p> <p>Make the pictorial presentation of the KORA completed by the protagonist of the lesson Road.</p> <p>explain what “goods” were traded via the Silk Road, including concepts such as ideas, religions, disease, etc</p> <p>The learners would be able to organise their thoughts and express freely..</p> | Make the pictorial presentation of the KORA completed by the protagonist of the lesson. | |
| February | Revision-Exam | | | |
| March | Exams | | | |

Yearly Planner (2024-25)

Grade: XI

Subject – Physical Education

Subject Incharge's name: Mr. Arvind Shirke

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|--|---|----------------------------|----------------|
| June | Changing Trends and Careers in Physical Education | <ul style="list-style-type: none"> Recognize the concept, aim, and objectives of Physical Education. Identify the Post-independence development in Physical Education. Categorize Changing Trends in Sports- playing surface, wearable gear, sports equipment, technological Explore different career options in the field of Physical Education. Make out the development of Khelo India and Fit India Program. Incorporate values of Olympism in your life. Differentiate between Modern and Ancient Olympic Games, Paralympics, and Special Olympic games Identify the Olympic Symbol and Ideals Describe the structure of the Olympic movement structure | Lecture-based instruction, | 8 periods |
| | Olympism Value Education | | | + 4 periods |

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| July | Yoga | <ul style="list-style-type: none"> • Recognize the concept of yoga and be aware of its importance; of it • Identify the elements of yoga • Identify the Asanas, Pranayama's, meditation, and yogic kriyas • Classify various yogic activities for the enhancement of concentration • Know about relaxation techniques for improving concentration. | | 10 periods + 10 periods |
| August | Physical Education and Sports for Children with Special Needs | <ul style="list-style-type: none"> • Identify the concept of Disability and Disorder. • Outline types of disability and describe their causes and nature. • Adhere to and respect children with special needs by following etiquettes. • Identify possibilities and scope in adaptive physical education • Relate various types of professional support for children with special needs along with their roles and responsibilities. | | 8 periods + 8 periods + 8 periods |
| | Physical Fitness, Wellness, and Lifestyle | <ul style="list-style-type: none"> • Explain wellness and its importance and define the components of wellness. • Classify physical fitness and recognize its importance in life. • Distinguish between skill-related and health-related components of physical fitness. • Illustrate traditional sports and regional games to promote wellness. • Relate leadership through physical activity and sports • Illustrate the different steps used in first aid - PRICE. | | |

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| September | Test, Measurement & Evaluation | <ul style="list-style-type: none"> • Define the terms test, measurement, and evaluation, • Differentiate norm and criterion referenced standards, • Differentiate formative and summative evaluation, • Discuss the importance of measurement and evaluation processes, • Understand BMI: A popular clinical standard and its computation • Differentiate between Endomorphy, Mesomorphy & Ectomorphy and describe the procedure of Anthropometric Measurement. | | <p>10 periods + 10 periods</p> |
| October | Fundamentals of Anatomy, Physiology in Sports | <ul style="list-style-type: none"> • Identify the importance of anatomy and physiology. • Recognize the functions of the skeleton. • Understand the functions of bones and identify various types of joints. • Figure out the properties and functions of muscles and understand how they work. • Understand the anatomy of the respiratory system and describe its working. • Identify and analyse the layout and functions of Circulatory System | | <p>12 periods</p> |
| November | Fundamentals Of Kinesiology And Biomechanics in Sports | <ul style="list-style-type: none"> • Understand Kinesiology and Biomechanics with their. • Application in sports. • Explain biomechanical principles and their utilization in sports and physical education. • Illustrate fundamental body movements and their basic patterns. • Learn about the Axis and Planes and their application with body movements. | | <p>8 periods + 10 periods</p> |

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| December | Psychology and Sports | <ul style="list-style-type: none"> • Identify the role of Psychology in Physical Education and Sports • Differentiate characteristics of growth and development at different stages. • Explain the issues related to adolescent behavior and Team Cohesion in Sports • Correlate the psychological concepts with the sports and athlete specific situations | | 8 periods + 8 periods |
| January | Training & Doping in Sports | <ul style="list-style-type: none"> • Understand the concept and principles of sports training. • Summarise training load and its concept. • Understand the concept of warming up & limbering down in sports training and their types, method & importance. • Acquire the ability to differentiate between the skill, technique, tactics & strategies in sports training. • Interpret concept of doping. | | 8 periods + 8 periods |
| February | Training & Doping in Sports | <ul style="list-style-type: none"> • Understand the concept and principles of sports training. • Summarise training load and its concept. • Understand the concept of warming up & limbering down in sports training and their types, method & importance. • Acquire the ability to differentiate between the skill, technique, tactics & strategies in sports training. • Interpret concept of doping. | | 8 periods + 8 periods +8 periods |
| March | EXAM | FINAL EXAM | | |



MIS INTERNATIONAL SCHOOL, Balewadi

Yearly Planner (2024-25)

Grade: XI

Subject – Artificial Intelligence

Subject Incharge's name: Ms Sarita Jeowani

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|--|--|--|----------------|
| June | Employability Skills 1.COMMUNICATION SKILLS III | Student will be able to understand <ul style="list-style-type: none"> ➤ Demonstrate knowledge of various methods of communication ➤ Identify specific communication styles ➤ Demonstrate basic writing skills | <ul style="list-style-type: none"> ➤ Writing pros and cons of written, verbal and non-verbal communication ➤ Listing do's and don'ts for avoiding common body language mistakes ➤ Observing and sharing communication styles of friends, teachers and family members and adapting the best practices ➤ Role plays on communication styles ➤ Demonstration and practice of writing sentences and paragraphs on topics related to the subject | 1 |
| | Unit 9: Classification & Clustering (Knowledge) | Knowledge – What is classification and its types, what kind of problems may be placed under the category of a classification problem Applications – Where to apply classification principals | AI Lab Activity given in their book | 2 |

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| | | <p>Analysis – Impact of the application of incorrect algorithms on society.</p> <p>Knowledge – Clustering problems and its application, why is it called clustering</p> <p>Application – Application of clustering problem using standard models</p> | | |
| July | 3.ICT SKILLS III | <p>Student will be able to understand</p> <ul style="list-style-type: none"> ➤ Create a document on word processor ➤ Edit, save and print a document in word processor | <p>1.Demonstration and practice of the following:</p> <ul style="list-style-type: none"> ➤ Listing the features of word processing ➤ Listing the software packages for word processing ➤ Opening and exit the word processor ➤ Creating a document <p>2.Demonstration and practicing the following:</p> <ul style="list-style-type: none"> ➤ Editing the text ➤ Word wrapping and alignment Changing font type, size and face ➤ Inserting header and footer ➤ Removing header and footer <p>3.Using autocorrect option</p> <p>4.Insert page numbers and bullet</p> <p>5.Save and print a document</p> | 1 |
| | Unit 7: Data Analysis (Computational thinking) (Skills) | <p>Knowledge – Types of structured data, statistical principals – frequency tables, mean, median, mode, range, etc.</p> <p>Application – Representing data in terms of graphs, statistical models</p> <p>Synthesis – To be able to represent a simple problem in terms of numbers.</p> | AI Lab Activity given in their book | 2 |

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| | Unit 10: AI Values (Bias awareness) | Knowledge – What is ethics, Impact of ethics on society, the impact of bias on AI functioning Evaluation – Biases in data, how to de-bias or neutralize the biased data Application – Finding bias in acquired dataset | AI Lab Activity given in their book | 2 |
| August | Subject Specific skills 1.Introduction of AI | Knowledge-Define AI and ML Comprehension-What are the AI products/applications in society and how are they different from non-AI products applications? Evaluation-What kind of jobs may appear in the future? | 1. Open Google 's Teachable Machine 2. Try out AI for Oceans 3. Open Learnml.eu/artbot.php on your web browser 4. | 2 |
| | Subject Specific skills 3.Math For AI | Comprehension – Linear Algebra, Statistics, Basics of Graphs and Set theory Application – Application of Math in AI Synthesis – Representing data in term of mathematical formula | Collect data from at least 20 students on “Daily Time on Netflix / Moblie Gaming “. Arrange in a tabular form as follows. | 2 |
| | | Comprehension – Linear Algebra, Statistics, Basics of Graphs and Set theory Application – Application of Math in AI Synthesis – Representing data in term of mathematical formula | Calculate variance and standard deviation of this data. What can you refer from the variance? | 2 |
| September | Revision & HYE Exam | | | |
| October | Unit 2: AI Applications and Methodologies | Knowledge – Where can AI be applied (like in the field of Computer vision, Speech, Text, etc.), What is deep learning? Comprehension – How AI will impact our society Analysis – How should we get ready for the AI age (future) | 1. Create a coffee bot for ordering a coffee 2. Make a simple chat bot 3. Try Shadow art 4. Affectiva Market Research Demo | 2 |

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| October | 2.Self-Management Skills III | <p>Demonstrate impressive appearance and grooming Demonstrate team work Apply time management strategies and techniques</p> | <ul style="list-style-type: none"> ➤ Group discussion on qualities of a good team ➤ Group discussion on strategies that are adopted for team building and team work ➤ Game on time management ➤ Checklist preparation ➤ To-do-list preparation | 2 |
| November | Unit 4: AI Values (Ethical decision making) | <p>Knowledge – Ethics, Bias, Impacts of bias on society Application – Spot issue in data, Make arguments, Apply rules</p> | <ul style="list-style-type: none"> ➤ Play the bias game ➤ Understand the future of automated media manipulation by either uploading your own photos | 2 |
| | 4.ENTREPRENEURIAL SKILLS-III | <ul style="list-style-type: none"> • Describe the significance of entrepreneurial values and attitude. • Demonstrate the knowledge of attitudinal changes required to become an entrepreneur. | <ul style="list-style-type: none"> ➤ Listing of entrepreneurial values by the students. ➤ Group work on identification of entrepreneurial values and their roles after listing or reading 2-3 stories of successful entrepreneur. ➤ Exhibiting entrepreneurial values in Ice breaking, rapport building, group work and home assignments. ➤ Preparing a list of factors that influence attitude in general and entrepreneurial attitude. ➤ Demonstrating and identifying own entrepreneurial attitudes during the following micro lab activities like thematic appreciation test ➤ Preparing a short write-up on "who am I" ➤ Take up a product and suggest how its features can be improved ➤ Group activity for suggesting brand names, names of enterprises, etc. | 2 |

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| December | Unit 5: Introduction to story telling | Skill – Imagination, mapping the plot into key events increasing memory retention. Application- Helping in creating blogs, videos, and other content | AI Lab Activity given in their book | 2 |
| December | Unit 6: Critical and Creative thinking (Skills) | Skill – Understanding the problem and being able to express the same Creativity – To be able to develop/innovate from design a solution | AI Lab Activity given in their book | 2 |
| January | Unit 8: Regression (Knowledge) | Knowledge – Correlations, Regression, and other related terms Applications – Being able to relate data with regression and correlation. Everyday applications of these mathematical concepts. | AI Lab Activity given in their book | 2 |
| January | 5.GREEN SKILLS - III | Describe importance of main sector of green economy Describe the major green Sectors/Areas and the role of various stakeholder in green economy | <ul style="list-style-type: none"> ➤ Preparing a poster on any one of the sectors of green economy ➤ Writing a two-page essay on important initiatives taken in India for promoting green economy ➤ Preparing posters on green Sectors/ Areas: cities, buildings, tourism, industry, transport, renewable energy, waste management, agriculture, water, forests and fisheries | 2 |
| February | Revision & Annual Exam | | | |
| March | Annual Exam | | | |



MIS INTERNATIONAL SCHOOL , Balewadi

Yearly Planner (2024-25)

Grade: XI

Subject - Informatics Practices

Subject Incharge's name: Ms Sarita Jeowani

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|--|--|---|----------------|
| June | 2. Getting Started with Python 3. Python Fundamentals | Students demonstrate Introduction of <ul style="list-style-type: none">• Python – Pluses• Python – Some Minuses (So Humans Like)• Working in Python• Understand First Program/ Script Students can create <ul style="list-style-type: none">• Python Character Set• Tokens• Barebones of a Python Program• Variables and Assignments• Simple input and output | <ul style="list-style-type: none">• Install the python idle in a computer. Do activity in interactive mode and Script mode.• Write a program that displays a joke. But display the punchline only when the user presses enter key.• Write a program that displays a joke. But display the punchline only when the user presses enter key.• Write a Python program that accepts radius of a circle and prints its area.• Write a program to read a number n and print n^2, n^3 and n^4.• Write a program to find area of a triangle.• Write a program to compute simple interest and compound interest.• Write a program to read details like name, class, age of a student and then print the details firstly in same line and then in separate lines. Make | 15 |

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| June | Ch 1 INTRODUCTION TO COMPUTER SYSTEM | <p>The topic is very informative and its prime objective is to educate students about fundamentals of computer systems so that they can become “Digital Citizen” of India. After learning this chapter the student will be able to apply learn about:</p> <ul style="list-style-type: none"> → What is Computer? → What are fundamental components of the Computer system- Input Unit, Output Unit, Central Processing Unit and Memory unit. → Evolution of Computer → Computer Memory- Primary Memory(RAM & ROM) and Secondary Memory, Cache Memory, Memory units. → What is Data Capturing, Data Storage and Data Retrieval. → What is Data Deletion and Data Recovery → What is Software , Need of Software , Types of Software → System Software - Operating System, System Utility, Device Drivers → Application Software - General purpose software and Customized Software. → Proprietary software & Free and Open Source Software. | <p>Activity 1: List all secondary storage devices available in your school or home.</p> <p>Activity 2: Visit some of the places like bank, automobile showroom, shopping mall, tehsil office, etc., and find out 2–3 names of tools/instruments used to capture data in digital format.</p> <p>Activity 3: Explore possible ways of recovering deleted data or data from a corrupted device.</p> <p>Activity 4: Create a test file and then delete it using Shift+Delete from the keyboard. Now recover the file using the methods you have explored at</p> <p>Activity 5: Locate any two device drivers installed on your computer.</p> <p>Activity 6: Install one application software in your computer.</p> | 20 |

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| <p>July & August</p> | <p>Ch 4 Data Handling</p> <p>Ch 5 Flow of control</p> <p>Ch 6 List Manipulation</p> | <p>Students can create their own program using these functions</p> <ul style="list-style-type: none"> • Control Statements: if-else, if-elif-else, while loop, for loop • Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions - len(),list(),append(),insert(), count(),index(),remove(), pop(), reverse(), sort(), • min(),max(),sum() • update(), del(), clear() • The students will be able to create the basics of List and its operations. • Also they can understand the traversing a list with its inbuilt functions. • They can manipulate the list. | <p>Data Handling</p> <ul style="list-style-type: none"> • Write a program to obtain temperatures of 7 days (Monday, Tuesday ... Sunday) and then display average temperature of the week. • Write a program to take year as input and check if it is a leap year or not. • Write a program to take two numbers and print if the first number is fully divisible by second number or not. • Write a program to take a 2-digit number and then print the reversed number. That is, if the input given is 25, the program should print 52. • Write a program that generates six random numbers in a sequence created with (start, stop, step). Then print the mean, median and mode of the generated numbers. <p>Flow of Control</p> <ul style="list-style-type: none"> • Write Python programs to sum the given sequences: • $1^2 + 3^2 + 5^2 + \dots + n^2$ (Input n) • Write a Python program to print every integer between 1 and n divisible by m. Also report whether the number that is divisible by m is even or odd. • Write Python programs to sum the given sequences: • $2/9 - 5/13 + 8/17 \dots$ (print 7 terms) | <p>20</p> |
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| | | | <p>List Manipulation</p> <ul style="list-style-type: none"> • Ask the user to enter a list containing numbers between 1 and 12. Then replace all of the entries in the list that are greater than 10 with 10. • Write a program to check if a number is present in the list or not. If the number is present, print the position of the number. Print an appropriate message if the number is not present in the list. • Create the following lists using a for loop: A list containing the squares of the integers 1 through 50. • Write a program that takes any two lists L and M of the same size and adds their elements together to form a new list N whose elements are sums of the corresponding elements in L and M. For instance, if L = [3, 1, 4] and M = [1, 5, 9], then N should equal [4,6,13]. • Write a program rotates the elements of a list so that the element at the first index moves to the second index, the element in the second index moves to the third index, etc., and the element in the last index moves to the first index. | |
| September | Revision & Half Yearly Exam | | | |
| October | Ch 7 Dictionaries | <p>The students will be able to apply the basics of Dictionaries.</p> <ul style="list-style-type: none"> • Dictionary methods and built in functions | <ul style="list-style-type: none"> • Find the largest and smallest numbers in a list. • Find the third largest number in a list. • Find the sum of squares of the first 100 natural numbers. | 10 |

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| | | <ul style="list-style-type: none"> • They can manipulate the dictionaries. • Finally student create the differences between List and Dictionaries. • Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting • elements, dictionary methods and built-in functions - dict(), len(), keys(), values(), items() | <ul style="list-style-type: none"> • Find whether a string is a palindrome or not. • Given two integers x and n, compute x^n • .Compute the greatest common divisor and the least common multiple of two integers. | |
| | Ch 8 Understanding Data (Deleted) | <p>After learning this chapter the student will be able to apply their knowledge in different activities</p> <ul style="list-style-type: none"> • Data • Importance of Data • Types of Data • Data Collection • Data Storage • Data Processing • Statistical Techniques for Data Processing | <ul style="list-style-type: none"> • Explaining the definition of Data and its importance • Introducing types of data viz Structured Data and Unstructured Data • with examples • Listing some examples of Data Collection • Explanation about Data Storage by recalling Secondary Storage • Devices • Explanation of Data Processing with different real life examples • Explanation of Measures of Central Tendency viz. Mean, Median and Mode with examples • Explanation of Measures of Variability viz. Range, Standard Deviation • with examples | |
| November | Ch 10 Database Concepts | <p>After learning this chapter the student will be able to apply their knowledge in different activities</p> <ul style="list-style-type: none"> • File System • Limitations of File System • Database Management System • Need of shift to DBMS from File System | <ul style="list-style-type: none"> • Listing Candidate Keys and Primary Key for various data set in form of tables • Identifying set of two tables with primary key and foreign key from real life data | 5 |

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| | | <p>Key Concepts of DBMS</p> <ul style="list-style-type: none"> • Relational Data Model and its terminology • Keys in a Relational Database • History of MySQL • MySQL Database system • Starting MySQL | <ul style="list-style-type: none"> • Identifying areas of real life environments where DBMS can be used • Writing Degree and Cardinality of different tables • Solving MCQs and Exercises | |
| December | Ch 11 Structured Query Language | <p>After learning this chapter the student will be able to apply their knowledge in different activities</p> <ul style="list-style-type: none"> • Structured Query Language • Data types and Constraints in MySQL • DDL Commands in MySQL • Creating database • Creating table • Viewing structure of table • Altering table structure • Removing Table / Database • DML Commands in MySQL • Populating table with data • Querying table • Updating table data • Deleting table data | <ul style="list-style-type: none"> • Write about the commands (i) CREATE DATABASE (ii) CREATE TABLE (iii) USE (iv) INSERT INTO • Querying using DDL and DML commands by providing table data • Solving MCQs and Exercises | 20 |
| January | Ch 12 Emerging Trends | <ul style="list-style-type: none"> • Immersive Experience with Extended Reality (XR) • Introduction • Artificial Intelligence • Machine Learning (ML) • Natural Language Processing (NLP) • Robotics • Big Data • Characteristics of Big Data • Data Analytics • Internet of Things (IoT) • Web of Things (WoT) • Sensors | <ul style="list-style-type: none"> • Activity 1: Find out how NLP is helping differently-abled persons? • Activity 2: Find out what role are robots playing in the medical field? • Activity 3: Explore and list a few IoT devices available in the market. • Activity 4: We use GPS to navigate outdoors. VPS is another emerging trend that uses Augmented Reality. Explore and find its other utilities. • Activity 5: Name a few data centers in India along with the major services that they provide. | 5 |

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| | | <ul style="list-style-type: none"> • Smart Cities • Cloud Computing • Cloud Services Types of Clouds • Grid Computing • Blockchain Technology • Blockchain Technology Keyterms • How Blockchain Technology Works | | |
| | <p>Ch 9. Working with Numpy(deleted)</p> | <p>After learning this chapter the student will be able to apply their knowledge in different activities</p> <ul style="list-style-type: none"> • NumPy Arrays • Anatomy of NumPy Arrays • NumPy Arrays vs. Python Lists • NumPy Data Types • Creating NumPy Arrays • Creating NumPy ID Arrays • Creating 2-dimensional NumPy Arrays • How NumPy Arrays are Internally Stored • Working with NumPy Arrays • Accessing Individual Elements using Array Indexing • Modifying the Values of NumPy Array • Array Slices • Iteration of NumPy Arrays • Joining/Concatenating NumPy Arrays • Obtaining Subsets of Arrays • Arithmetic Operations on NumPy Arrays • Arithmetic Operations on 1D NumPy Arrays • Arithmetic Operations on 2D NumPy Arrays • Using Functions with NumPy Arrays • Using count() and mode() with NumPy Arrays | <ul style="list-style-type: none"> • Write a NumPy program to add, subtract, multiply, divide an ndarray, element-wise. • Write a NumPy program to get the element-wise powers of an ndarray values. Write a NumPy program to calculate element-wise the absolute value. • Write a NumPy program to create an ndarray with six random integers between 10... 30. • Write a NumPy program to create an ndarray of 3 * 3 size having random values. Find the mi and maximum values. • Write a NumPy program to create a 10 * 4 ndarray having random values and extract the first E of the array and store them into another ndarray. | <p>10</p> |

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| February | Revision & Annual Exam |
| March | Annual Exam |



MIS INTERNATIONAL SCHOOL

Yearly Planner (2024-25)

Grade: XI

Subject -BIOLOGY

Subject Incharge's name: Mrs. Ashwini Pandhare

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|--|---|--|-----------------------------|
| June | Chapter 1: The Living World | Students will know and understand <ul style="list-style-type: none"> • Need for classification • Three domains of life • Taxonomy and systematics • Concept of species and taxonomical hierarchy • Binomial nomenclature • Tools for study of taxonomy • Understand and differentiate between living and non-living. Group organisms on the basis of similarities and differences. | <ul style="list-style-type: none"> • Parts of a compound microscope. • Classification of living organisms and its economic importance. | 8 periods |
| | Ch-2 BIOLOGICAL CLASSIFICATION 2A-Kingdom Monera 2B-Kingdom Protista 2C-Kingdom Fungi | <ul style="list-style-type: none"> • Define alternation of generation, dikaryon • Identifies different mycelium, viruses, protozoans • Understands the process of sexual reproduction in fungi, alternation of generation in plants • Acquires the knowledge of different groups of animals. • Appreciates the role of microbes in our daily life. | | 4 periods + 8 periods |

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| | | <p>Students will know and understand</p> <ul style="list-style-type: none"> Salient features of major groups of plants Distinguishing features and examples of each category. Life cycles of bryophytes, pteridophytes, gymnosperms and angiosperms Students would be able to 1.Draw a labeled diagram to Show life cycles of bryophytes, pteridophytes, gymnosperms and angiosperms 2.Understand difference between gametophyte and sporophyte. 4.Understand formation of spores and gametes in different stages of life cycles | | |
| July | <p>Ch-3 Plant Kingdom</p> | <p>Students will know and understand</p> <ul style="list-style-type: none"> study of various organisms on various basis,categorisation of chordates and non-chordates their structure and appearance and occurrence Contrasting features of various phylum and their comparative study | <ul style="list-style-type: none"> Specimens/slides/models and identification with reasons - Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen | <p>10 periods</p> <p>+</p> |
| | <p>Ch-4 Animal Kingdom</p> | <ul style="list-style-type: none"> Enable the students to know and understand the morphology & modifications Root, Stem, leaf, Inflorescence, Flower, Parts of a flower, Fruit, Seed, Structure of dicot & monocotyledonous seed. Students are able to understand & describe a flower parts, writes floral formula with floral diagrams. Students are able to develop Skill of drawing the diagrams Enable the students to apply their learnt knowledge in real life situation. | | <p>10 periods</p> |
| <p>August</p> | <p>Ch-5 Morphology of Flowering plants</p> | <ul style="list-style-type: none"> Appreciate the diversity in anatomy of root, stem and leaf. define tissues Explain the types of tissues based on their ability to divide or not. Explain the features of parenchyma, collenchyma and sclerenchyma. Differentiate among epidermal, vascular and ground tissue system. define conjoint, collateral, open, closed exarch and endarch vascular bundles | <ul style="list-style-type: none"> Study and describe locally available common flowering plants, from family Solanaceae (Poaceae, Asteraceae or Brassicaceae can | <p>9 periods</p> <p>+</p> <p>9 periods</p> |

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| | | <ul style="list-style-type: none"> Correlate the anatomy of root, stem and leaf. | <p>be substituted in case of particular geographical location) including dissection and display of floral whorls, anther and ovary to show number of chambers (floral formulae and floral diagrams), type of root (tap and adventitious); type of stem (herbaceous and woody); leaf (arrangement, shape, venation, simple and compound)</p> | |
| | Ch-7 Structure Organization In Animals | <ul style="list-style-type: none"> Students acquire knowledge about terms of chapter such as Biotic and abiotic components, productivity, decomposition, energy flow, nutrient recycling, detritus, humification, mineralization, standing crop, ecological succession etc. Students able to justify the claim that free flow of solar energy is required support ecosystem dynamics. They will be able to distinguish primary and secondary productivity, detritus and grazing food chain, standing crop and standing state. Students will be able to predict the changes in biotic community of a given abiotic environment. | | |
| September | Ch-8 Cell-The basic unit of life | <ul style="list-style-type: none"> Students understood how these cellular components are used to generate and utilize energy in cells Students will understand the cellular components underlying mitotic cell division. Students will apply their knowledge of cell biology to selected examples of changes or losses in cell function. Students are able to explain and apply cell theory | <ul style="list-style-type: none"> Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials. Separation of plant pigments through paper chromatography | <p>10 periods + 9 periods</p> |
| | Ch-9 Biomolecules | <ul style="list-style-type: none"> Students will be able to know and understand the carbohydrates on the basis of number of carbon atoms and functional group. Protein structure and function, zwitter ion, pH sensitivity, polymerization. Structure of nucleic acids and its function, difference between | | |

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| | | <ul style="list-style-type: none"> DNA and RNA, polymerization of nucleotides to form polymer. They would come to know and understand about enzymes and catalytic activity. | | |
| October | Ch-10 Cell Cycle and division | <ul style="list-style-type: none"> Students will be able to know and understand cell division functions in reproduction, growth, and repair. The structural organization of a prokaryotic and eukaryotic genome. The major events of eukaryotic cell division that enable the genome of one cell to be passed on to two daughter cells. The chromosome number changes throughout the human life cycle | <ul style="list-style-type: none"> Mitosis in onion root tip cells and animals cells (grasshopper) from permanent slides. Different types of inflorescence (cymose and racemose). | 6 periods + 10 periods |
| | Ch-11 Photosynthesis in higher plants | <p>Students will be able to:</p> <ul style="list-style-type: none"> Recall the conducting tissues in plants and their components. define the terms diffusion, osmosis, guttation and plasmolysis; Explain various means of transport, types of transport, plant water relations, osmosis, plasmolysis, imbibition, long distance transport of water, Transpiration, movement of food and theories related to it. Categorize means of short distance transport in plants. Describe the pathways of water from root hair up to leaf; Explain the process and significance of transpiration; | | |
| November | Ch-12-Respiration in plants | <ul style="list-style-type: none"> Understand and realize the different pathways in photosynthesis and different steps Appreciate the work of scientists behind the discovery of photosynthesis. Reason out the requirements of pigment molecules. Observe and derive inference from the experiments and activities. Develop the skill of doing | <ul style="list-style-type: none"> Study of distribution of stomata on the upper and lower surfaces of leaves. Comparative study of the rates of transpiration in | 8 periods + 6 periods + 6 periods |
| | Ch-13 Plant growth and development | <ul style="list-style-type: none"> Students should understand the irreversible phenomena of plant growth and physiological activity of plant hormones during its development | | |

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| | Ch-14- Breathing And exchange of gases | <ul style="list-style-type: none"> Students know the organs of respiration Terms like expiration, inspiration, Lung capacity Lung volume Etc. Understand the structure and working of Respiratory system, Mechanism of breathing. Know the regulation of respiration, Understand the need of maintaining healthy respiratory system Develop the skill of drawing diagram of respiratory system. | <p>the upper and lower surfaces of leaves.</p> <ul style="list-style-type: none"> Study of the rate of respiration in flower buds/leaf tissue and germinating seeds | |
| Decem ber | Ch-14- Breathing And exchange of gases | <ul style="list-style-type: none"> Students know the organs of respiration Terms like expiration, inspiration, Lung capacity Lung volume Etc. Understand the structure and working of Respiratory system, Mechanism of breathing. Know the regulation of respiration, Understand the need of maintaining healthy respiratory system Develop the skill of drawing diagram of respiratory system. | <ul style="list-style-type: none"> Preparation and study of T.S. of dicot and monocot roots and stems (primary). Study of osmosis by potato osmometer. Study of plasmolysis in epidermal peels | <p>8 periods</p> <p>+ 8 periods</p> |
| | Ch-15 Body fluids and their circulation | <p>Students will know and understand</p> <ul style="list-style-type: none"> All the components of human circulatory system Mechanism of coagulation of blood Concept of human blood group Describe circulatory pathways Describe cardiac cycle Understand electrocardiograph | | |
| January | Ch-16 Excretory products and their elimination | <ul style="list-style-type: none"> State the function of the urinary system Name the products of excretion Describe the structure of the urinary system. Recall that urine is stored in the bladder. Describe the function of the kidneys in filtering the Bloodstream. Describe the function of the skin in excretion | <ul style="list-style-type: none"> Test for presence of urea, sugar, albumin, bile salts in urine. Virtual specimens/slides /models and identifying features of - Amoeba, | <p>8 periods</p> <p>+ 8 periods</p> <p>+ 6 periods</p> |
| | Ch-17- Locomotion and movement | <ul style="list-style-type: none"> Understand the structure and function of types of muscles and skeletal system. Critically analyses the various movements related to joints in the skeletal system. Appreciate the mechanism of muscle contraction takes place in our body and how effectively they bring movement along with the skeletal system. | | |

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| | | <ul style="list-style-type: none"> • Design Creative methods/techniques to bring a positive change in the life style so as to prevent the various diseases related to muscle and bone. • Develop citizenship by visualizing and observing the given scenario (arthritis, gout, osteoporosis, muscular dystrophy) in day to day lives and present it in the form of a skit to sensitize others. | Hydra,liverfluke, Ascaris, leech, earthworm, prawn, silkworm, honey bee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit. | |
| | Ch-18 –Neural control and coordination | <ul style="list-style-type: none"> • Students will know and understand the Coordination to maintain homeostasis. • Mechanism of generation and conduction of nerve impulse • Concept of transmission of impulse through synapse. • Understand functions of different parts of brain. | | |
| February | Ch-19- Chemical coordination and integration | <ul style="list-style-type: none"> • After completing this unit, you will be able to : • Describe the chemical classification of hormones. • Compare hormone action in case of protein and steroid hormones. • Describe the mammalian endocrine system. • Describe the neuroendocrine connection and the mechanism by which hypothalamus regulates the secretion from pituitary. • Discuss hormonal imbalance and its role in various diseases. | <ul style="list-style-type: none"> • Human skeleton and different types of joints with the help of virtual images/models only | 8 periods |
| March | Result | | | |

PT1- Ch-1,2,3,4

Half yearly-1-9 Ch



MIS INTERNATIONAL SCHOOL

Yearly Planner (2023-24)

Grade: XI

Subject – General Studies

Subject In charge's name: Mr. Ram Gabale

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-----------|------------------------|--|---|----------------|
| June/July | Science and technology | <ul style="list-style-type: none">• Highlight Science as a necessary part of our everyday life.• Explore emerging technologies.• Analyze the impact of Science and emerging technologies on our lives. | prepare a projects (in groups of 5-7 students) where some models based on emerging technologies may be presented and explained such as solar panels, rain water | 10 periods |

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| | | | harvesting, e-waste management, etc. | |
| August/September | Current trends in socio-economic structure | <p>Students will be able to</p> <ul style="list-style-type: none"> • Analyze the quality of labor such as skilled Labor, unskilled Labor, bonded labor and child labor (agriculture, industry, constructions)., • Know about the acts passed by various governments for the welfare and protection of all kinds of labor. <ul style="list-style-type: none"> • Understand the quality of labor in the various fields such as agriculture, industry, constructions etc., • Analyze the measures and protection acts taken by the state and central governments to improve the conditions of labors. • Suggest solutions to improve the conditions of the labors, through innovative ideas to improve the wages, safety and working environment. | <p>Read the newspaper, journals which are giving more importance to solving the problems of workers.</p> <ul style="list-style-type: none"> • Group discussions regarding the improvement of workers, provide in service training as per their requirement. | 10 periods |

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| <p>October/ November</p> | <p>Nation building</p> | <p>Students will be able to</p> <ul style="list-style-type: none"> • demonstrate an understanding of Unity in Diversity and unified Socio-economic, political structure • Know how National Integration helps in keeping the stability of the nation. • Explore how National Integration encourages communal harmony, fights casteism, regionalism and linguistic differences. <ul style="list-style-type: none"> • analyze the conditions in India pre and the post-independence period • Recall the various National movements like Non-cooperation Movement, Civil Disobedience Movement and Quit India Movement etc. • Appreciate the role and sacrifices made by the freedom fighters which marked a new awakening and how relevant they are in the present time. • understand the various aspects of the constitution and how it safeguards democracy, secularism and social equality | <p>Students to watch debates on current issues based on political and social topics and discuss its outcomes in the classroom.</p> <ul style="list-style-type: none"> • Visit to the local FM stations and encourage students to collect the data of programs presented on social issues. | <p>12 periods</p> |
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| December | Promoting global understanding | <p>Students will be able to</p> <ul style="list-style-type: none"> • Understand globalization, structural causes of conflict and analyze the circumstances and emergence of new ones. • Explore the aspects that promote peace and different methods of conflict intervention and resolution in international conflicts. • Develop students' ability to compare and apply major approaches to understand the origin of global conflicts and critically evaluate opportunities for peace building. • Analyze their verbal and non-verbal interactions pertaining to global conflict synchrony to make meaningful communication. • internalize that promoting peace and different methods of conflict interventions can be done through goal management, collaborative team skills etc. | <ul style="list-style-type: none"> • Examine tourism as a global industry and human activity that promotes and facilitates understanding of historical and cultural values. | 10 periods |
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| January | Workforce Education | <p>Students will enhance</p> <ul style="list-style-type: none"> • Communication skills and presentation skills by articulating, explaining and expressing their views on the data given. • Problem solving skills, critical thinking skills and time management by creating business reports as per the current industry requirements, conducting business correspondence through research and analyzing the data relevant to the issues. | Collect statistical reports on the stock market and understand the schemes related to companies/ investments etc. from a bank. | 12 periods |

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| | | <ul style="list-style-type: none">• Students will be able to analyze their verbal and non-verbal interactions which will be in synchrony to make meaningful communication.• Students will internalize the personality development techniques by focusing on punctuality, goal management, and collaborative team skills and listening skills. | | |
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MIS INTERNATIONAL SCHOOL Yearly Planner (2024-25)

Grade: XI

Subject -Chemistry

Subject Incharge's name: Vibhawari Gajghate

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|---|--|------------------------------|----------------|
| June | Chapter 1. Some basic concepts of chemistry | After studying this unit students will be able to: 1.Appreciate the role of chemistry in different spheres of life. 2.Explain the characteristics of three states of matter classify different substances 3.Explain various laws of chemical combination 4.Appreciate significance of atomic mass, average atomic mass, molecular mass , mole, concentration of solution in different units 5.Perform stoichiometric calculations. | | 14 |
| July | Chapter 2: structure of atom | 1.The students will understand discovery of subatomic particles. They will understand various atomic models. 2. Understand the nature of EM waves and terminologies associated. 3. Relate the failure of one atomic model to overcome the drawbacks of the same to frame a new theory. | 1.Basic Laboratory Technique | 16 |

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| | | 4. Know and understand quantum numbers and will be able to write electronic configuration. | | |
| August | नक्कल Chapter:3 classification of elements and periodicity in properties Chapter-4: Chemical bonding and molecular structure | 1. students will be able to comprehend genesis of periodic classification of elements e.g. laws of triads and octaves, Mendeleev's law 2. Understand the Modern Periodic Law; relate the significance of atomic number and electronic configuration 3. Nomenclature Z>100. 4. Classify elements into s, p, d, f blocks and learn their main characteristics; 5. The students will understand periodic trends in properties of elements. 1. Understand Kossel Lewis approach to chemical bonding; 2. Explain the octet rule and its limitations | 2. Determination of melting point of an organic compound. 3. Determination of boiling point of an organic compound. 4. Crystallization of impure sample of Copper Sulphate. | 12 8 |
| September | Chapter-4: Chemical bonding and molecular structure (contd) | Student will be able to 3. Describe the VSEPR theory and predict the geometry of simple molecules; 4. Explain the valence bond approach 5. Explain the different types of hybridization involving s, p and d orbitals and draw shapes of simple covalent molecules; 6. Describe the molecular orbital theory 7. Explain the concept of hydrogen bonding | 5.. Preparation of standard solution of Oxalic acid. 7. Determination of strength of a given solution of Sodium hydroxide by titrating it against standard solution of Oxalic acid. | 10 |
| October | Chapter-7 Redox reaction: Chapter-5 Thermodynamics | Redox reaction: After studying this unit students will be able to : | 6. Determination of pH of some solutions obtained from fruit juices, solution of known and varied concentrations of acids, | 6 |

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| | | <ol style="list-style-type: none"> 1. Define the terms oxidation , reduction, redox reaction, oxidizing agent and reducing agent. 2. comprehend oxidation number concept. 3. understand types of redox reaction 4. Balance chemical equations using half reaction method <p>After studying this unit student will be able to</p> <ol style="list-style-type: none"> 1. Explain thermodynamic terms 2. State first law of Thermodynamics and express it mathematically. 3. Explain state functions: correlate ΔU and ΔH. 4. Calculate enthalpy changes for various types of reactions. 5. State and apply Hess's law of constant heat summation. 6. Explain entropy as a Thermodynamic state function and apply it for spontaneity. 7. Explain Gibbs energy change. | bases and salts using pH paper or universal indicator | 1 6 |
| November | Chapter–8:Organic Chemistry- some basic principle and techniques | <p>After studying this unit student will be able to:</p> <ol style="list-style-type: none"> 1. understand reasons for tetra valence of carbon and shapes of organic molecules; 2. Write structures of organic compounds classification and name the compounds according to IUPAC system 3. Understand the concept of organic reaction mechanism. 4 Methods of purification ,qualitative and quantitative analysis | <ol style="list-style-type: none"> 8. Preparation of standard solution of Sodium carbonate. 9. Determination of strength of a given solution of hydrochloric acid by titrating it against standard Sodium Carbonate solution. | 16 |
| December | | Students will be able to : | Qualitative Analysis | 12 |

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| | Chapter–9 Hydrocarbons | <p>1..Distinguish between alkanes, alkenes, alkynes and aromatic hydrocarbons on the basis of physical and chemical properties; 2. Name hydrocarbons according to IUPAC system of nomenclature</p> <p>3.Draw and differentiate between various conformations of ethane;</p> <p>4. comprehend the structure of benzene, explain aromaticity and understand mechanism of electrophilic substitution reactions of benzene.</p> <p>5. Predict the directive influence of substituent's in monosubstituted benzene ring.</p> | | |
| January | Chapter: 6 Equilibrium | <p>Students will be able to understand</p> <p>:1. Dynamic nature of equilibrium involved in physical and chemical processes</p> <p>2.Law of equilibrium,</p> <p>3. Establish a relationship between K_p and K_c.</p> <p>4.Various factors that affect the equilibrium state of a reaction</p> <p>5.classify substances as acids or bases according to Arrhenius, bronsted-Lowry and Lewis concepts, classify acids and bases as weak or strong in terms of their ionization constants,</p> <p>6. Buffer solutions, calculate solubility product.</p> | Qualitative Analysis | 16 |
| February | Chapter: 6 Equilibrium (contd) | | | |
| March | Annual Exam | | | |



MIS INTERNATIONAL SCHOOL
Yearly Planner (2024-25)

Grade: XI

Subject - Physics

Subject Incharge's name : Minal Chaudhari

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|--|--|--|----------------|
| June | Chapter - 1 Units and Measurements | By the end of this Unit students should be able to: 1. Handle tools and laboratory apparatus properly; 2. measures physical quantities using appropriate apparatus, instruments, and devices; such as, scales, vernier calipers, screw gauge 3. Units of measurement; systems of units; SI units, fundamental and derived units, significant figures. 4. Dimensions of physical quantities, dimensional analysis and its applications. | Practical 1. To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Callipers and hence find its volume. 2. To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm. | 10 |
| July | Chapter -2 Motion in Straight line | By the end of this Unit students should be able to: 1. The learner differentiates between certain physical quantities; such as, between distance and displacement; speed and velocity; rectilinear and curvilinear motions; average, | Practical 1. To measure diameter of a given wire and thickness of a given sheet using screw gauge. | 10 |

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| | <p>Chapter – 3 Motion in Plane</p> | <p>relative, and instantaneous velocity and speed;</p> <p>2. applies concepts of physics in daily life with reasoning while decision making and solving problems; such as, maximum possible speed of a car on a banked road;</p> <p>By the end of this Unit students should be able to</p> <ol style="list-style-type: none"> 1. Distinguish between Scalar and vector quantities. 2. Understand position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number 3. Able to do addition and subtraction of vectors resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors. Motion in a plane, cases of uniform velocity and uniform acceleration, projectile motion, uniform circular motion. | <p>2. To determine mass of a given body using a metre scale by principle of moments.</p> | <p>10</p> |
| <p>August</p> | <p>Chapter -4 Laws of Motion</p> | <p>By the end of this Unit students should be able to:</p> <ol style="list-style-type: none"> 1. Understand Intuitive concept of force, Inertia, 2. Describe and explains Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion. Law of conservation of linear momentum and its applications. | <p>Practical</p> <ol style="list-style-type: none"> 1. To determine radius of curvature of a given spherical surface by a spherometer. | <p>12</p> |

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| | <p>Chapter–5: Work, Energy and Power</p> | <p>3. Explain conditions for Equilibrium of concurrent forces. 4. Define and explain - Static and kinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion: Centripetal force, examples of circular motion</p> <p>By the end of this Unit students should be able to:</p> <p>1. Describe and explain the exchange among potential energy, kinetic energy, and internal energy for Simple mechanical systems, such as a pendulum a roller coaster, a spring. A freely falling object. Predict velocities, heights, and spring Compressions based on energy Conservation.</p> | <p>2. To plot a graph for a given set of data, with proper choice of scales and error bars.</p> | <p>12</p> |
| <p>September</p> | <p>Chapter–6: System of Particles and Rotational Motion</p> | <p>By the end of this Unit students should be able to:</p> <p>1. Use the relationship between torque and angular</p> | <p>Practical 1. To find the weight of a given body using parallelogram law of vectors.</p> | <p>10</p> |

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| | <p>Chapter–7: Gravitation</p> | <p>momentum according to Newton’s second law, as well as its application in solving problems involving rigid bodies.</p> <p>2. Specify the angular speed. angular velocity off a rotating body. Determine the velocity and acceleration of a point in the rotating body.</p> <p>By the end of this Unit students should be able to:</p> <p>1. Understand Kepler's laws of planetary motion, universal law of gravitation.</p> <p>2. Acceleration due to gravity and its variation with altitude and depth.</p> <p>3. Gravitational potential energy and gravitational potential, escape speed, orbital velocity of a satellite.</p> | <p>2. To measure the force of limiting friction for rolling of a roller on a horizontal plane.</p> <p>3. To study the effect of detergent on surface tension of water by observing capillary rise.</p> | <p>10</p> |
| <p>October</p> | <p>Chapter–8: Mechanical Properties of Solids</p> | <p>By the end of this Unit students should be able to:</p> <p>1. The learner recognizes different processes used in Physics-related industrial and technological applications; such as, knowledge of strength of materials used for structural design of columns, beams</p> | <p>Practical</p> <p>1. To find the force constant of a helical spring by plotting a graph between load and extension.</p> | <p>7</p> |

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| | Chapter–9: Mechanical Properties of Fluids | and supports while designing a building; By the end of this Unit students should be able to: 1. The learner understands hydrostatic problems, motion of fluids. 2. Identify derivation of basic equations of fluid mechanics and apply | 2. To observe and explain the effect of heating on a bi-metallic strip. | 8 |
| | Chapter–10: Thermal Properties of Matter | By the end of this Unit students should be able to: 1. Different methods of heat transfer, Concept of thermal expansion and Laws of cooling. 2. Define Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity. 3. Understand qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law | 3. To note the change in level of liquid in a container on heating and interpret the observations. | 8 |
| November | | By the end of this Unit : | Practical | 14 |

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| | Chapter–13: Oscillations | <ol style="list-style-type: none"> 1. Learners will be able to understand the basic concept of generation of waves along with its classification and mathematical analysis and SHM. 2. Learners will be able to understand the concept of different forms of energy possessed by a body executing SHM with its mathematical analysis. 3. Learners will be able to understand the concept of resonance, free oscillations the concept of SHM. | <ol style="list-style-type: none"> 1. Using a simple pendulum, plot its L- T² graph and use it to find the effective length of second's pendulum. 2. To study variation of time period of a simple pendulum of a given length by taking bobs of same size but different masses and interpret the result. | |
| December | Chapter–14: Waves | <p>By the end of this Unit students should be able to:</p> <ol style="list-style-type: none"> 1. Understanding of concepts, derivations, inferences and phenomena of interference of waves and beats 2. Application of knowledge of waves in relevant situations like Doppler Effect. | <ol style="list-style-type: none"> 1. To study the relation between frequency and length of a given wire under constant tension using sonometer. 2. To study the relation between the length of a given wire and tension for constant frequency using Sonometer. 3. To find the speed of sound in air at room temperature using a resonance tube by two resonance positions. | 12 |
| January | Chapter11: Thermodynamics | <p>By the end of this Unit students should be able to understand :</p> <ol style="list-style-type: none"> 1. Thermal equilibrium and definition of temperature, heat, work and internal energy 2. First law of thermodynamics, isothermal & adiabatic processes. 3. Second law of thermodynamics: reversible and irreversible processes, eat engine and refrigerator | <ol style="list-style-type: none"> 1. To observe change of state and plot a cooling curve for molten wax. | 12 |

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| February | Chapter-12: Kinetic Theory | <p>By the end of this Unit students should be able to Understand :</p> <ol style="list-style-type: none"> 1. Equation of state of perfect gas, work done in compressing a gas. 2. Kinetic theory of gases-assumptions, concept of pressure. 3. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom. 4. law of equi-partition of energy and application to specific heat capacities of gases; concept of mean free path, Avogadro's number. | <ol style="list-style-type: none"> 1. To study the effect of load on depression of a suitably clamped metre scale loaded at (i) its end (ii) in the middle. | 8 |
| March | Result | | | |



MIS INTERNATIONAL SCHOOL, Balewadi

Yearly Planner (2024-25)

Grade: 11

Subjects - Math

Subject In charge's name: Ms Shalini Negi

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|------------------------|---|---|----------------|
| June | Sets | <ul style="list-style-type: none"> Draw and interpret Venn diagrams of set relations and operations and use Venn diagrams to solve problems. Perform operations on sets | To Verify that the set had n number of elements, then the total number of subsets is 2^n | 8 |
| | Relation and Functions | <ul style="list-style-type: none"> Perform operations on functions, including adding, subtracting, multiplying, and dividing functions. Determine the characteristics of the graph that results from these operations. Determine the nature of the graph of different functions | To verify that for two sets A and B, $n(A \times B) = pq$ and the total number of relations from A to B is 2^{pq} , where $n(A) = p$ and $n(B) = q$. | 10 |
| July | Trigonometric Function | Students understand how trigonometric functions relate to right triangles and solve word problems involving right triangles. They extend the definitions of the trigonometric functions beyond right triangles using the unit circle and they measure angles in radians as well as degrees. They draw and analyze graphs of trigonometric functions | To find the values of sine and cosine functions in second, third and fourth quadrants using their given values in first quadrant | 12 |

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| | Complex numbers | <ul style="list-style-type: none"> Describe the need for extending the set of real numbers to the set of complex numbers; Define a complex number and cite examples; Identify the real and imaginary parts of a complex number; | To obtain a quadratic function with the help of linear functions graphically | 7 |
| August | Complex numbers | <ul style="list-style-type: none"> State the condition for equality of two complex numbers; Properties of complex numbers Calculate conjugate and properties of complex numbers | | 3 |
| | Linear Inequalities | <p>Students will able to</p> <ul style="list-style-type: none"> Identify the regions on a graph that represent the solution to a system of inequalities, sketch a graph to represent a system of linear inequalities in order to solve them, Identify the system of linear inequalities represented by a graph. | To verify that the graph of a given inequality, say $5x + 4y - 40 < 0$, of the form $ax + by + c < 0$, $a, b > 0$, $c < 0$ represents only one of the two half planes. | 8 |
| | Permutation and combination | <p>After studying this lesson on the students will be able:</p> <ul style="list-style-type: none"> To develop an understanding of the concept of a permutation. To build skills simplifying expressions involving factorial notation. To Define a permutation and explain how to calculate To explains what a factorial is and its relation to permutations. | To find the number of ways in which three cards can be selected from given five cards | 8 |

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| | | <ul style="list-style-type: none"> To state that permutation is an arrangement and write the meaning of . To apply the knowledge of permutations in practical situations. | | |
| September | Permutation and combination | <p>After studying this lesson the students will be able:</p> <ul style="list-style-type: none"> To State that a combination is a selection and write the meaning of To Distinguish between permutations and combinations To solve some actual Combination and factorial problems. To develop an understanding of the concept of a Combination. To apply the knowledge of combinations in practical situations. | | 6 |
| | Binomial theorem | <ul style="list-style-type: none"> Students will be able to learn statement and proof Binomial Theorem for positive power Students will be able to recognize Patterns in expansion of binomial theorem. Students will be able to learn general terms of binomial theorem. | | 5 |
| HALF YEARLY EXAMINATION | | | | |
| October | Binomial theorem | <ul style="list-style-type: none"> Students will be able to learn Middle Terms of binomial theorem. Students will be able to evaluate a binomial coefficient in binomial expansion Students will be able to find a particular term in binomial expansion. | To construct a Pascal's Triangle and to write binomial expansion for a given positive integral exponent. | 5 |

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| | | <ul style="list-style-type: none"> Students will be able to apply binomial theorem in expansion and in approximations | | |
| October | Sequence and Series | <ul style="list-style-type: none"> Students will be able to define Sequences and Series. Students will be able to distinguish Sequences and Series. Students will be able to understand Arithmetic progression. Students will be able to evaluate General term of AP/ Sum to n-terms of AP / Students will be able to understand Geometric Progression. Students will be able to evaluate General term of GP/Sum to n-terms of GP /Geometric mean. | To obtain formula for the sum of squares of first n-natural numbers. | 10 |
| November | Straight lines | <p>TO ENABLE THE STUDENTS TO KNOW AND UNDERSTAND</p> <ul style="list-style-type: none"> Slope of a line – Slope of a line when co ordinates of any two points on the line are given Conditions for Parallelism and perpendicularity of lines in terms of their slopes Angle between two lines Collinearity of three points Various forms of Equation of a line : Horizontal and Vertical lines .Points – slope form of line , Two –point form of line , Slope-intercept form of line , Intercept form of line , Normal form of line <p>General form of a Line – Different forms of $Ax + By + C = 0$ viz.,</p> | To verify that the equation of a line passing through the point of intersection of two lines $a_1 x + b_1 y + c_1 = 0$ and $a_2 x + b_2 y + c_2 = 0$ is of the form $(a_1 x + b_1 y + c_1) + \lambda (a_2 x + b_2 y + c_2) = 0$. | 12 |

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| | | <p>Slope-intercept form , Intercept form , Normal form .</p> <ul style="list-style-type: none"> Distance of a point from a Line and Distance between two parallel lines | | |
| November | Conic Section | <ul style="list-style-type: none"> Students will be able to have the knowledge of conic section, equation of circle, equation of parabola, equation of ellipse, equation of hyperbola | Construct a parabola | 4 |
| December | Conic Section | <ul style="list-style-type: none"> Students will be able to understand the different types of conic section, equation of circle, equation of parabola, equation of ellipse, equation of hyperbola. Students will be able to draw the different types of conic sections. Students will be able to apply the knowledge of conic sections to solve the problems. Students will be able to apply the knowledge the knowledge of conic sections in their daily life. | | 5 |
| | Introduction to 3-D | <p>Students will able to</p> <ul style="list-style-type: none"> Identifying the position of the point on 3D SPACE Finding the distance between two points on 3-D plane Application of section formula | | 8 |
| January | Limits and Derivatives | <p>Student will able to</p> <ul style="list-style-type: none"> Find limit of a function and derivative of a function Evaluate derivative of a function using first principle Find derivative using different rules Geometrical meaning of derivative Apply this derivative in different day today activities. Ie in daily life. | Verification of the geometrical significance of derivative. | 10 |

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| | Statistics | <ul style="list-style-type: none"> • Students learn about Measures of Dispersion like - <ul style="list-style-type: none"> ➤ Mean Deviation ➤ Variance ➤ Standard Deviation. • Students get to know about Mean Deviation for grouped data and ungrouped data. • Students learn about Measures of Dispersion like <ul style="list-style-type: none"> ➤ Mean Deviation ➤ Variance <ul style="list-style-type: none"> • Standard Deviation. Students are enlightened about the short-cut method to find Variance and Standard Deviation. • Students also learn about Coefficients of Variation and to an extent learn how to apply these concepts of Statistics in real life | | 8 |
| February | Probability | <p>The students will learn:</p> <ul style="list-style-type: none"> • To acquaint students with different aspects of mathematics used in daily life. • To develop an interest in students to study mathematics as a discipline. • Students will observe the outcomes of the random experiment. • They will relate the set of all possible outcomes to a set 'S' the sample space. • They are able to relate event E of S as the subset of S • They understand the measure of uncertainty through P(E). | To write the sample space, when a coin is tossed once, two times, three times, four times. | 7 |

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| | | <ul style="list-style-type: none"> They will apply the concept of P(E) in many day to day situations. | | |
| March | Annual Exam | | | |



MIS INTERNATIONAL SCHOOL, Balewadi

Yearly Planner (2024-25)

Grade: 11

Subject – Fine Art

Subject In charge's name: Mrs-Sagar

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|--|---|---|----------------|
| April | <ul style="list-style-type: none"> Introduction Molduit clay Art | <p>Learners and educator will be able to introduce themselves.</p> <p>Learners will be able to create clay art on wood.</p> | <p>Introduction</p> <p>Clay Art on wood.</p> | 3 |
| June | <ul style="list-style-type: none"> Design(T-Shirt) Still-Life | <p>Learners will be able to apply elements and principle of Art and create Design on T-shirts.</p> <p>Learners will be able to observe and draw a group of objects.</p> | <p>Design in any shapes on T-shirts.</p> <p>Still-Life draw and paint group of objects.</p> | 5 |
| July | <ul style="list-style-type: none"> Puppet making Warli Art | <p>Learners will be able to make puppets.</p> | <p>Puppet making.</p> <p>Warli Art</p> | 5 |

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| | | Learners will be able to observe study and draw Warli Art | | |
| August | <ul style="list-style-type: none"> Pointillism Painting. | Learners will be able to pointillism and create their own pointillism painting. | Pointillism Painting (Landscape). | 1 |
| September | <ul style="list-style-type: none"> Sculpture (Candle carving) Assessment - 1 | Learners will be able to create a any shape on candle. | Candle Carving. | 3 |
| October | <ul style="list-style-type: none"> Canvas Painting. Marble Printing. | <p>Learners will be able to study and complete the painting through use of fundamental figures and objects.</p> <p>Learners will be able to create Marble effects through this technique.</p> | <p>Canvas Painting.</p> <p>Marble Printing.</p> | 6 |
| November | <ul style="list-style-type: none"> Leaf Painting. Ink Painting | <p>Learners will be able to paint leaf by using their creativity.</p> <p>Learners will be able to create the ink painting using ink.</p> | <p>Leaf Painting.</p> <p>Ink painting</p> | 2 |
| December | <ul style="list-style-type: none"> Memory Drawing. | Learners will be able to draw and color. | Memory Drawing. | 3 |
| January | <ul style="list-style-type: none"> Composition. | Learners will be able to compose and color the Figurative composition. | Composition. | 3 |
| February | Revision | | | |
| March | Assessment - 2 | | | |



MIS INTERNATIONAL SCHOOL, Balewadi

Yearly Planner (2024-25)

Grade: XII

Subject -Mathematics

Subject In-charge's name: Ms. Rupinderjit Kaur

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|-----------------------------|---|------------|----------------|
| April | Chapter 3 : Matrices | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none">• Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices.•Operations on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Noncommutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). •Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries). | | 10 |
| | Chapter-4 : Determinants | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none">• Determinant of a square matrix (up to 3 x 3 matrices), minors, co-factors and applications of determinants in finding the area of a triangle.• Adjoint and inverse of a square matrix.• Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix. | | 12 |

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|------|---|--|--|----|
| June | Chapter 12: Linear programming | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> • Introduction, related terminology such as constraints, objective function, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints). | | 6 |
| | Chapter-1 : Relations and functions | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> • Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions. | <ol style="list-style-type: none"> 1. To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \perp m\}$ is symmetric but neither reflexive nor transitive. 2. To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \parallel m\}$ is an equivalence relation. 3. To demonstrate a function which is not one-one but is onto. 4. To demonstrate a function which is one-one but not onto. | 6 |
| | Chapter -2 : Inverse trigonometric functions | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> • Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions. | | 6 |
| July | Chapter 5 : Continuity and Differentiability | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> •Continuity and differentiability •chain rule, derivative of inverse trigonometric functions, like $\sin^{-1} x$, $\cos^{-1} x$ and $\tan^{-1} x$, derivative of implicit functions. • Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation | <ol style="list-style-type: none"> 5. To find analytically the limit of a function $f(x)$ at $x = c$ and also to check the continuity of the function at that point. | 15 |

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| | | <ul style="list-style-type: none"> •Derivative of functions expressed in parametric forms. •Second order derivatives. | | |
| | Chapter 6 : Application of Derivatives | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> • Rate of change of quantities • Increasing/decreasing functions • Maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). • Simple problems (that illustrate basic principles and understanding of the subject as well as real life situations). | <p>6. To understand the concepts of local maxima, local minima and point of inflection</p> <p>7. To verify that amongst all the rectangles of the same perimeter, the square has the maximum area.</p> <p>8. To understand the concepts of absolute maximum and minimum values of a function in a given closed interval through its graph.</p> <p>9. To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.</p> | 7 |
| August | Chapter 7 : Integration | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> • Integration as inverse process of differentiation. •Integration of a variety of functions by substitution, by partial fractions and by parts. • Evaluation of simple integrals of the different types and problems based on them. •Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals. | | 17 |
| September | Chapter 8 : Application of Integrals | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> • Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only) | | 4 |
| | Chapter 9 : Differential Equations | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> •Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of | | 8 |

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| | | homogeneous differential equations of first order and first degree. Solutions of linear differential equation. | | |
| October | Chapter 10 : Vector Algebra | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> • Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. • Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. • Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors | | 8 |
| | Chapter 11 : 3D Geometry | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> • Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines. | | 8 |
| November | Chapter 13 : Probability | <p>The students will be able to understand the following topics:</p> <ul style="list-style-type: none"> • Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable. | 10. To explain the computation of conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice. | 10 |
| | REVISION | | | |
| December | Pre-board | | | |
| January | REVISION | REVISION | REVISION | REVISION |

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| February | Revision-Exam | | | |
| March | | | | |

PT1- ch-3.4, 12, 1, 2

Half yearly- ch-1, 2, 3, 4, 5, 6, 7, 12




MIS INTERNATIONAL SCHOOL
Balewadi
Yearly Planner (2024-25)

Grade: 12



Subject Incharge

Subject – Fine Art

Name: Mrs - Vaishali

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|------------|---|---|--|----------------|
| April | <ul style="list-style-type: none">Design (Tray/pot)Sculpture (Soap Carving) | <p>They will learn how to draw design.</p> <p>They will learn carving on the soap.</p> | <p>Design</p> <p>Sculpture (Soap carving)</p> | 4 |
| June | <ul style="list-style-type: none">Painting (canvas)Landscape (Water color) | <p>They will learn how to paint on the canvas.</p> <p>They will learn how to make landscape using water color</p> | <p>Painting canvas</p> <p>Landscape (Water color)</p> | 4 |
| July नवंबर | <ul style="list-style-type: none">CompositionLippan Art | <p>They will learn how to compose the composition</p>  | <p>Composition</p> <p>Lippan Art</p> | 4 |
| August | Cup Painting | | Cup Painting | 2 2 |



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| September | <ul style="list-style-type: none">• Coffee painting |  | Coffee painting | 2 |
| | <ul style="list-style-type: none">• ASSESMENT | | | |
| November | <ul style="list-style-type: none">• Memory Drawing. | They will learn how to draw memory drawing. | Memory Drawing. | 2 2 |
| December | ASSESMENT 2. | | | |



MIS INTERNATIONAL SCHOOL

Yearly Planner (2024-25)

Grade: XII

Subject – Physical Education

Subject Incharge's name: Mr. Arvind Shirke

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|--|---|---|----------------|
| April | Chapter 1 : Management of Sporting Events | <p>To make the students understand the need and meaning of planning in sports, committees, and their responsibilities for conducting the sports event or tournament. • To teach them about the different types of tournaments and the detailed procedure of drawing fixtures for Knock Out, League Tournaments, and Combination tournaments.</p> <ul style="list-style-type: none">• To make the students understand the need for the meaning and significance of intramural and extramural tournaments• To teach them about the different types of community sports and their importance in our society. <p>After completing the unit, the students will be able to:</p> <ul style="list-style-type: none">* Describe the functions of Sports Event management* Classify the committees and their responsibilities in the sports event* Differentiate the different types of tournaments.* Prepare fixtures of knockout, league & combination.* Distinguish between intramural and extramural sports events * Design and prepare different types of community | <p>Lecture-based instruction,</p> <ul style="list-style-type: none">▪ Technology-based learning,▪ Group learning,▪ Individual learning , <ul style="list-style-type: none">▪ Inquiry-based learning,▪ Kinaesthetic learning,▪ Game-based learning and▪ Expeditionary learning. | 8 |

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| | Chapter-2 : Children and Women in Sports | <ul style="list-style-type: none"> • To make students understand the exercise guidelines of WHO for different age groups • To make students aware of the common postural deformities • To make students aware of women’s sports participation in India and about the special conditions of women. • To make students understand menarche and menstrual dysfunction among women athletes. • To make them understand about female athlete triad. <p>After completing the unit, the students will be able to:</p> <ul style="list-style-type: none"> * Differentiate exercise guidelines for different stages of growth and development. * Classify common postural deformities and identify corrective measures. * Recognize the role and importance of sports participation of women in India. * Identify special considerations relate to menarche and menstrual dysfunction. * Express female athlete triad according to eating disorders. | | 8 |
| June | Chapter 3: Yoga as Preventive measure for Lifestyle Disease | <ul style="list-style-type: none"> • To make students Understand about the main life style disease - Obesity, Hypertension, Diabetes, Back Pain and Asthma. • To teach about different Asanas in detail which can help as a preventive Measures for those Lifestyle Diseases. <p>After completing the unit, the students will be able to: *</p> <ul style="list-style-type: none"> Identify the asanas beneficial for different ailments and health problems. * Recognize importance of various asanas for preventive measures of obesity, diabetes, asthma, hypertension, back pain and arthritis * Describe the procedure for performing a variety of asanas for maximal benefits Outline the role of yogic management for various health benefits and preventive measures. | | 8 |

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| | Chapter- 4 : Physical Education & Sports for (CWSN) | <ul style="list-style-type: none"> • To make students understand the concept of Disability and Disorder. • To teach students about the types of disabilities & disorders, their causes, and their nature. • To make them aware of Disability Etiquette. • To make the students Understand the advantage of physical activity for CWSN. • To make the students aware of different strategies for making physical activity accessible for Children with Special Needs. <p>After completing the unit, the students will be able to: *</p> <ul style="list-style-type: none"> Value the advantages of physical activities for children with special needs * Differentiate between methods of categorization in sports for CWSN * Understand concepts and the importance of inclusion in sports * Create advantages for Children with Special Needs through Physical Activities Strategies physical activities accessible for children with special needs | | 7 |
| July | Chapter - 5 : Sports & Nutrition | <ul style="list-style-type: none"> • To make the students understand the importance of a balanced diet • To clear the concept of Nutrition – Micro & Macro nutrients, Nutritive & nonNutritive Components of diet • To make them aware of eating for weight loss and the results of the pitfalls of dieting. • To understand food intolerance & food myths <p>After completing the unit, the students will be able to: *</p> <ul style="list-style-type: none"> Understand the concept of a balanced diet and nutrition. Classify Nutritive and NonNutritive components of the Diet * Identify the ways to maintain a healthy weight * Know about foods commonly causing food intolerance * Recognize the pitfalls of dieting and food myths | | 8 |

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| | Chapter 6 : Test and Measurement in Sports | <ul style="list-style-type: none"> • To make students Understand and conduct SAI KHELO INDIA Fitness Test and to make students Understand and conduct General Motor Fitness Test. • To make students to determine physical fitness Index through Harvard Step Test/Rockport Test • To make students to calculate Basal Metabolic Rate (BMR) • To measure the fitness level of Senior Citizens through Riklis and Jones Senior Citizen Fitness Test. <p>After completing the unit, the students will be able to: *</p> <ul style="list-style-type: none"> Perform SAI Khelo India Fitness Test in school [Age group 5-8 years/ (class 1-3) and Age group 9-18yrs/ (class 4-12) * Determine physical fitness Index through Harvard Step Test/Rock- port Test * Compute Basal Metabolic Rate (BMR) * Describe the procedure of Rikli and Jones - Senior Citizen Fitness Test | | 8 |
| August | Chapter 7 : Physiology & Injuries in Sport | <ul style="list-style-type: none"> • Understanding the physiological factors determining the components of physical fitness. • Learning the effects of exercises on the Muscular system. • Learning the effects of exercises on Cardiovascular system. • Learning the effects of exercises on the Respiratory system. • Learning the changes caused due to aging. • Understanding the Sports Injuries (Classification, Causes, and Prevention) • Understanding the Aims & Objectives of First Aid • Understanding the Management of Injuries <p>After completing the unit, the students will be able to: *</p> <ul style="list-style-type: none"> Recognize the physiological factors determining the components of physical fitness. * Comprehend the effects of exercise on the Muscular system and cardiorespiratory systems. * Figure out the physiological changes due to ageing * Classify sports injuries with its Management. | | 10 |

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| September | Chapter 8 : Biomechanics and Sports | <ul style="list-style-type: none"> • Understanding Newton’s Laws of Motion and their Application in Sports. • Make students understand the lever and its application in sports. • Make students understand the concept of Equilibrium and its application in • sports. • Understanding Friction in Sports. • Understanding the concept of Projectile in sports <p>After completing the unit, the students will be able to: *</p> <ul style="list-style-type: none"> * Understand Newton’s Law of Motion and its application in sports * * Recognize the concept of Equilibrium and its application in sports. * Know about the Centre of Gravity and will be able to apply it in sports * * Define Friction and application in sports. * * Understand the concept of Projectile in sports | | 8 |
| October | Chapter 9 : Psychology and Sports | <ul style="list-style-type: none"> • To make students understand Personality & its classifications. • To make students understand motivation and its techniques. • To make students about Exercise Adherence and Strategies for enhancing Adherence to Exercise. • To make them aware of Aggression in sports and types. • To make students understand Psychological Attributes in Sports. <p>After completing the unit, the students will be able to</p> <ul style="list-style-type: none"> * Classify different types of personality and their relationship with sports performance. * Recognize the concept of motivation and identify various types of motivation. * Identify various reasons to exercise, its associated benefits and strategies to promote exercise adherence. * Differentiate between different types of aggression in sports. * Explain various psychological attributes in sports. | | 10 |
| November | Chapter 10 : Training in Sports | <ul style="list-style-type: none"> • Making the students understand the concept of talent identification and methods in sports • Making the students Understand sports training and the different cycle in sports training. • Making the students Understand different types & methods of strengths, • endurance, and speed. • Making the students Understand different types & methods of flexibility and • coordinative ability. • Making the students understand Circuit training and its importance. | | 8 |

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| | | After completing the unit, the students will be able to: * understand the concept of talent identification and methods used for talent development in sports * Understand sports training and the different cycle used in the training process. * Understand different types & methods to develop -strength, endurance, and speed in sports training. * Understand different types & methods to develop – flexibility and coordinative ability. * Understand Circuit training and its importance. | | |
| December | Revision & pre Board | | | |
| January | | | | |
| February | Revision-Exam | | | |
| March | | | | |

PT1- ch-1,2,3,

Half yearly- ch-1,2,3,4,5



MIS INTERNATIONAL SCHOOL

Yearly Planner (2024-25)

Grade: XII

Subject - Physics

Subject Incharge's name : Minal Chaudhari

| MONTH | UNIT/CONTENT | LEARNING OUTCOMES | ACTIVITIES/ASSIGNMENTS | No. of Periods |
|-----------------|--|--|---|----------------|
| March, April | Unit-1 Electrostatics Chapter -1: Electric Charges and Fields Chapter-2: Electrostatic Potential and Capacitance | <p>At the end of the chapter , students will be able to ,understand the concept of Electric Charge, Difference between conductors and insulators.</p> <p>Charging by induction, Basic properties of electric charge, Coulomb's law, Electric field, Electric dipole ,Gauss's law, Application of Gauss's law</p> <p>Electric potential, potential difference, electric potential due to a point charge a dipole an system of charges, equipotential surfaces , electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.</p> <p>Conductors and insulators , free charges and bound charges inside a conductor ,</p> <p>Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor.</p> | <p>Worksheet will be given to students based on the chapter.</p> <p>Lab activity : Experiment: To determine resistance per cm of a given wire by plotting a graph for potential difference versus current</p> | 15 |
| June | Unit-2 Current Electricity | Electric current , flow of electric charges in a metallic conductor , drift velocity , mobility and their relation | Lab Activity : Experiments: | |

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|------|--|---|--|--------------|
| | Chapter-3: Current Electricity | with electric current : (10Ohm's law , electrical resistance, V-I characteristics (linear and non linear) electrical energy and power, electrical resistivity and conductivity carbon resistors: temperature dependence of resistance. Internal resistance of a cell, potential difference and emf of a cell , combination of cells in series and in parallel , Kirchoff's laws and simple applications : Wheatstone bridge, metre bridge Potentiometer: principal and its applications to measure potential difference and for comparing emf of two cells, measurement of internal resistance of a cell. | 1.To find resistance of a given wire using metre bridge and hence determine the resistivity of its material. 2.To verify the laws of combination (series) of resistances using a metre bridge 3.To verify the laws of combination (parallel)of resistances using a metre bridge. 4.To compare the EMF of two given primary cells using potentiometer. | 15 |
| July | Unit-3 Magnetic Effects of Current and Magnetism Chapter-4 : Moving Charges and Magnetism | At the end of the chapter , students will be able to ,understand the concept of magnetic field, Orested's experiment. Biot- Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire. Straight and toroidal solenoids (only equivalent treatment), Force on a moving a charge in uniform magnetic and electric fields. Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors- definition of ampere, torque experienced by a current loop in uniform magnetic field: moving coil galvanometer- its current sensitivity and conversion to ammeter and voltmeter. | Lab Activity: Experiments: 1.To convert given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same. 2.To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same. | 10 10 |
| | Chapter- 5 : Magnetism and Matter | Current loop as a magnetic dipole and its magnetic dipole moment, bar magnet as an equivalent solenoid , magnetic field lines , earth's magnetic field and magnetic elements. | To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected | |

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| | | | in proper order and correct the circuit and also the circuit diagram. | |
| August, | Unit-4 : Electromagnetic Induction and Alternating Currents Chapter-6 : Electromagnetic Induction Chapter-7: Alternating Current | At the end of the chapter , students will be able to ,understand the concept of Electromagnetic induction, Faraday’s laws, induced emf and current , Lenz’s Law , Eddy currents. Self and mutual induction. Alternating currents, peak and RMS value of alternating current /voltage , resistance and impedance. LC oscillations (qualitative treatment only), LCR series circuit, resonance, power in AC circuits , AC generator and transformer | Lab Activity: To measure resistance, voltage (AC/DC) current (AC) and check continuity of a given circuit using multimeter. | 10 |
| September | Unit-5: Electromagnetic waves Chapter -8: Electromagnetic waves | At the end of the chapter , students will be able to ,understand the concept of Electromagnetic waves, their characteristics (qualitative ideas only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses. | Worksheets will be given to students based on the chapter. | 5 |
| | Unit -6 : Optics Chapter-9 : Ray Optics and Optical Instruments | At the end of the chapter , students will be able to ,understand the concept of Ray Optics: refraction of light, total internal reflection and its applications, optical fibers: refraction at spherical surfaces, lenses, thin lens formula, lens maker’s formula, magnification, power of lens, combination of thin lenses in contact, refraction and dispersion of light through light. Optical Instrument: Microscopes and astronomical telescopes (reflecting and refracting) their magnifying power. | Lab Activity: Experiments: 1. To find the value of v for different values of u in case of a concave mirror and to find the focal length. 2. To find the focal length of convex mirror, using a convex lens. 3. To find the focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$. 4. To find the focal length of a concave lens using a convex lens. | 18 |

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| | | | 5. To determine the angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation. | |
| | Chapter -10: Wave Optics | Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygens's Principle. Interference : Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light; diffraction due to a single slit, width of central maximum | Worksheets will be given to students based on the chapter. | 10 |
| November | Unit8: Atoms and Nuclei Chapter-12: Atoms Chapter-13 : Nuclei | At the end of the chapter , students will be able to ,understand the concept of Alpha particle scattering experiment ; Rutherford's model of atom; Bohr model , energy levels , hydrogen spectrum. Composition and size of nucleus, atomic masses, isotopes, isobars, isotones. Radioactivity alpha, beta and gamma particles/rays and their properties radioactive decay law. Mass-energy relation, , mass defect; binding energy per nucleon and its variation with mass number ; nuclear fission, nuclear fission. | Worksheets will be given to students based on the chapter. | 8 |
| December | Unit-9: Electronic Devices Chapter- 14: Semiconductors and Electronic: Materials, Devices and simple circuits. | At the end of the chapter , students will be able to ,understand the concept of Energy bands of conductors, semiconductors and insulators (qualitative ideas only) Semiconductor diode: V-I characteristics in forward and reverse bias; diode as a rectifier. Special purpose p-n junction diodes: LED, photodiode, solar cell | Lab Activity : Experiments: 1.To draw the I-V characteristic curve for a p-n junction in forward bias and reverse bias. | 8 |

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MIS INTERNATIONAL SCHOOL , Balewadi

Yearly Planner (2024-25)

Grade: XII

Subject - ARTIFICIAL INTELLIGENCE

Subject Incharge's name: Ms Sarita Jeowani

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|--------------------------------|---|--|------------------|
| April | Unit 1: Capstone Project | <ul style="list-style-type: none"> • Understanding the problem • Decomposing the problem through DT framework • Analytic Approach • Data Requirements • Data Collection • Modelling approach • How to validate model quality → By test-train split → Introduce concept of cross validation • Metrics of model quality by simple Maths and examples from small datasets – scaled up to capstone project (Apply) → RMSE- Root Mean Squared Error → MSE – Mean Squared Error → MAPE – Mean Absolute Percent Error • Introduction to commonly used algorithms and the science behind them • Showcase through a compelling story | AI Lab Activity given in the textbook. | 20 Th +10 Pr. |
| | Unit 1.COMMUNICATION SKILLS-IV | 1.Describe the steps to active listening skills <ul style="list-style-type: none"> • Importance of active listening at workplace • Steps to active listening | 1.Demonstration of the key aspects of becoming active listener | 4 |

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| | | <p>2. Demonstrate basic writing skills Writing skills to the following:</p> <ul style="list-style-type: none"> • Sentence • Phrase • Kinds of Sentences • Parts of Sentence • Parts of Speech • Articles • Construction of a Paragraph | 2. Preparing posters of steps for active listening | |
| June | Unit 2: Model lifecycle (Knowledge) | <p>Different aspects of Model</p> <ul style="list-style-type: none"> → Train, test, validate, → What are hyper parameters → Commonly used platforms to build and run models (Introduction) → Recommended tools → Links to different platforms o Watson • Lifecycle of an AI model → Build → Deploy → Retrain | AI Lab Activity given in the textbook. | 20 |
| | Unit 2.SELF-MANAGEMENT SKILLS-IV | <p>Describe the various factors influencing self- motivation.</p> <ul style="list-style-type: none"> • Finding and listing motives (needs and desires) • Finding sources of motivation and inspiration (music, books, activities); expansive thoughts, living fully in the present moment dreaming big <p>Describe the basic personality traits, types and disorders</p> <ul style="list-style-type: none"> • Describe the meaning of personality • Describe how personality influence others • Describe basic personality traits • Describe common personality disorders paranoid, antisocial, schizoid. borderline, narcissistic, avoidant, dependent and obsessive | <ul style="list-style-type: none"> • Group discussion on identifying needs and desire • Discussion on sources of motivation and inspiration. • Demonstrate the knowledge of different personality types | 5 |

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| <p>July</p> | <p>Unit 3: Story- telling through data (Critical and Creative thinking Skills)</p> | <p>The Need for Storytelling o Information processing and recalling stories</p> <ul style="list-style-type: none"> • Why is storytelling important? • Structure that story! <p>How to create stories?</p> <ul style="list-style-type: none"> • Begin with a pen-paper approach • Dig deeper to identify the sole purpose of your story • Use powerful headings • Design a Road-Map • Conclude with brevity <p>Ethics of storytelling</p> <p>Types of Data and Suitable Charts</p> <ul style="list-style-type: none"> • Text [Wordclouds] • Mixed [Facet Grids] • Numeric [Line Charts/ Bar Charts] • Stocks [Candlestick Charts] • Geographic [Maps] • <p>Stories During the Steps of Predictive Modeling</p> <ul style="list-style-type: none"> • Data Exploration • Feature Visualizing • Model Creation • Model Comparisons <p>Best Practices of Storytelling</p> <ul style="list-style-type: none"> • • Analytics Vidhya (https://www.analyticsvidhya.com/blog/2020/05/art- storytelling-analytics-data-science/) • Udemy: (https://www.udemy.com/course/tell-a-story-with-data/) • Coursera: | <p>AI Lab Activity given in the textbook.</p> | <p>30</p> |
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| | | <p>(https://www.coursera.org/learn/intro-business-analytics)</p> <ul style="list-style-type: none"> • Coursera: <p>(https://www.coursera.org/learn/communicate-with-impact)</p> | | |
| July | ICT SKILLS-IV | <p>Perform tabulation using spreadsheet application</p> <ul style="list-style-type: none"> • Introduction to spreadsheet application. • Spreadsheet applications • Creating a new worksheet • Opening workbook and entering fret • Resizing fonts and styles • Copying and moving • Filter and sorting • Formulas and functions • Password protection • Printing a spreadsheet. • Saving a spreadsheet in various Formats <p>Prepare presentation using presentation application</p> <ul style="list-style-type: none"> • Introduction to presentation • Software packages for presentation • Creating a new presentation • Adding a slide • Deleting a slide • Entering and editing text • Formatting test • Inserting clipart and images • Slide layout • Saving a presentation • Printing a presentation document | <p>Demonstration and practice on the following</p> <ul style="list-style-type: none"> • Introduction to the spreadsheet application • Using the spreadsheet applications • Creating a new worksheet • Opening the workbook and enter text • Resizing fonts and styles • Copying and move the cell data Sorting and Filter the data • Applying elementary formulas and Functions • Protecting the spreadsheet with password • Printing a spreadsheet • Saving the spreadsheet in various formats <p>Demonstration and practice on the following:</p> <ul style="list-style-type: none"> • Listing the software packages for presentation | 4 |

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| | | | <ul style="list-style-type: none"> • Explaining the features of presentation • Creating a new presentation • Adding a slide to presentation • Deleting a slide • Entering and edit text • Formatting text • Inserting clipart and images • Sliding layout • Saving a presentation • Printing a presentation document | |
| August | Unit 4: Entrepreneurial Skills VI | <p>Identify the general and entrepreneurial behavioral competencies</p> <ul style="list-style-type: none"> • Barriers to becoming entrepreneur. • Behavioural and entrepreneurial competencies- adaptability/ decisiveness, initiative/ perseverance, interpersonal skills, organizational skills, stress management, valuing service and diversity. <p>Demonstrate the knowledge of self-assessment of behavioral competencies</p> <ul style="list-style-type: none"> • Entrepreneurial competencies in particular self-confidence, initiative, seeing and acting on opportunities, concern for quality, goal setting and risk taking, problem solving and creativity, systematic planning and efficiency, information seeking, persistence, influencing and negotiating, team building. | <ul style="list-style-type: none"> • Administering self-rating questionnaire and score responses on each of the competencies • Collect small story/ anecdote of prominent successful entrepreneurs • Identify entrepreneurial competencies reflected in each story and connect it to the definition of behavioural competencies. • Preparation of competencies profile of students. | 4 |

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| | | | <ul style="list-style-type: none"> • Games and exercises on changing entrepreneurial behavior and development of competencies for enhancing self-confidence. problem solving, goal setting, information seeking, team building and creativity | |
| | <p>Unit 5 Green Skill VI</p> | <p>Identify the role and importance of green jobs in different sectors</p> <ul style="list-style-type: none"> • Role of green jobs in taxing-free homes • Green organic gardening. public transport and energy conservation • Green jobs in water conservation • Green jobs in solar and wind power, waste reduction, reuse and recycling of wastes • Green jobs in green tourism • Green jobs in building and construction • Green jobs in appropriate technology • Role of green jobs in Improving energy and raw materials use • Role of green jobs in limiting greenhouse gas emissions • Role of green jobs minimizing waste and pollution • Role of green jobs in protecting and restoring ecosystems • Role of green jobs in support adaptation to the effects of climate change | <ul style="list-style-type: none"> • Listing of green jobs and preparation of posters on green job profiles • Prepare posters on green jobs | <p>4</p> |
| <p>September</p> | <p>Revision & Half Yearly Exam</p> | | | |

| | | |
|----------|------------------------|----|
| October | Revision | 20 |
| November | Revision | 10 |
| December | Revision | 20 |
| January | Revision | 20 |
| February | Revision & Annual Exam | |
| March | Annual Exam | |



MIS INTERNATIONAL SCHOOL , BALEWADI

Yearly Planner (2024-25)

Grade: XII

Subject - Informatics Practices

Subject Incharge's name: Ms Sarita Jeowani

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|--------------|---|---|--|----------------|
| April & June | Data Handling using Pandas and Data Visualization | <p>Students can apply their knowledge Create Series, Data frames and apply various operations.</p> <ul style="list-style-type: none"> Visualize data using relevant graphs <p>Unit 1: Data Handling using Pandas -I Introduction to Python libraries- Pandas, Matplotlib. Data structures in Pandas - Series and Data Frames. Series: Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing and Slicing. Data Frames: creation - from dictionary of Series, list of dictionaries, Text/CSV files; display; iteration; Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels, Boolean Indexing; Importing/Exporting Data between CSV files and Data Frames. Data Visualization Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram Customizing plots: adding label, title, and legend in plots</p> | <p>Data Handling</p> <ul style="list-style-type: none"> 1. Create a panda's series from a dictionary of values and a ndarray 2. Given a Series, print all the elements that are above the 75th percentile. 3. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category and print the total expenditure per category. 4. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions 5. Filter out rows based on different criteria such as duplicate rows. 6. Importing and exporting data between pandas and CSV file <p>Visualization 1. Given the school result data, analyses the performance of the students on different parameters, e.g subject wise or class wise.</p> | 20+20 |

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| | | | <p>2. For the Data frames created above, analyze, and plot appropriate charts with title and legend.</p> <p>3. Take data of your interest from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.</p> | |
| June & July | Database Query using SQL | <p>Students can apply their knowledge Design SQL queries using aggregate functions.</p> <ul style="list-style-type: none"> • Import/Export data between SQL database and Pandas. • Revision of database concepts and SQL commands covered in class XI • Math functions: POWER (), ROUND (), MOD (). Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM (). Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME (). Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*). • Querying and manipulating data using Group by, Having, Order by. • Working with two tables using equi-join | <ol style="list-style-type: none"> 1. Create a student table with the student id, name, and marks as attributes where the student id is the primary key. 2. Insert the details of a new student in the above table. 3. Delete the details of a student in the above table. 4. Use the select command to get the details of the students with marks more than 80. 5. Find the min, max, sum, and average of the marks in a student marks table. 6. Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by. 7. Write a SQL query to order the (student ID, marks) table in descending order of the marks. | 20 +17 |
| July | Introduction to Computer Networks | <p>Students can apply their knowledge</p> <ul style="list-style-type: none"> • Learn terminology related to networking and internet. • Identify internet security issues and configure browser settings. • Introduction to networks, Types of network: PAN, LAN, MAN, WAN. | <ol style="list-style-type: none"> 1. Find the IP addresses of at least five computers in your school. 2. Find the MAC addresses of at least 2 computers in your lab. Then verify their manufacturer's name on the net. | 12 |

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| | | <ul style="list-style-type: none"> • Network Devices: modem, hub, switch, repeater, router, gateway • Network Topologies: Star, Bus, Tree, Mesh. • Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP. • Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website. • Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies. | <p>3. Find the layout of LAN in your school's labs. If you think some modifications can be done in the layout, note these down in your notebook.</p> <p>4. Find the name of Internet Service Provider of your school.</p> <p>5. Find the IP address of your school's web site.</p> | |
| August | Societal Impacts | <p>Students can apply their knowledge</p> <ul style="list-style-type: none"> • Identify internet security issues and configure browser settings. • Understand the impact of technology on society including gender and disability issues. • Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS), cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act. E-waste: hazards and management. Awareness about health concerns related to the usage of technology. | <p>Learners should be sensitized to avoid plagiarism and violation of copyright issues while working on projects. Teachers should take necessary measures for this. Any resources (data, image etc.) used in the project must be suitably referenced. The project can be done individually or in groups of 2 to 3 students. The project should be started by students at least 6 months before the submission deadline.</p> | 14 |
| September | Revision & Half Yearly Exam | | | |
| October | Revision | | | 20 |
| November | Revision | | | 5 |
| December | Revision | | | 20 |
| January | Revision | | | 5 |
| | Revision | | | 10 |
| February | Revision & Annual Exam | | | |
| March | Annual Exam | | | |



MIS INTERNATIONAL SCHOOL, BALEWADI

Yearly Planner (2024-25)

Grade: XII

Subject -BIOLOGY

Subject Incharge's name: Mrs. Ashwini Pandhare

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|--|---|--|---|
| April | Chapter-2: Sexual Reproduction in Flowering Plants | To enable students to- 1. State the structure & function of the floral parts including: Sepal, petal, stamen, carpel. 2. State that the Pollen grain produces male gamete and define the terms: pollination, self-pollination with Outline methods of pollination including: cross-pollination & self-pollination. 3. Explain various techniques of outbreeding devices. 4. State that the Embryo sac produces an egg cell & polar nuclei. 5. Define the term: fertilisation. 6. Outline seed structure & function of following: testa, plumule, radicle, embryo, cotyledon 7. Explain development of embryo and seed. & food supply (endosperm or seed leaves) 8. Classify plants as monocotyledon or dicotyledon & distinguish between them. 9. Make reference to non-endospermic seed. 10. Outline fruit formation. Outline seedless fruit production 11. Define the term dormancy. State advantages of dormancy. 12. Explain importance of apospory for hybrid seed production. 13. Draw well labelled diagrams of of mega sporangium, microsporangium, various stages of mega and microsporogenesis, development of embryo and structure of seed. | 1. Prepare a temporary mount to observe pollen germination. 2. Study the plant population density by quadrat method. 10. Models specimen showing symbolic association in root modules of leguminous plants, Cuscuta on host, lichens. 11. Flash cards models showing examples of homologous and analogous organs. | 8 periods + 8 periods + 6 periods |
| | Chapter-3: Human Reproduction | STUDENTS WILL BE ABLE TO:- 1. Describe events of human reproduction. 2. Describe male and female reproductive system. 3. Illustrate the structure of male and female reproductive system. | | |

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| | | <ol style="list-style-type: none"> 4. Illustrate the process of ovulation. 5. Explain fertilization. 6. Explain spermatogenesis and oogenesis. 7. Label the structure of sperm and ova. 8. Explain and understand about menstrual cycle. 9. List the function of testis and ovary. 10. Explain the role of progesterone and testosterone. 11. Explain embryonic development and in human. 12. Describe parturition and lactation. | | |
| | Chapter-4: Reproductive Health | <p>At the end of this lesson students will be able to</p> <ol style="list-style-type: none"> 1. Define reproductive health. 2. Know about the problems associated with reproductive health. 3. Discuss how the reproductive health related problems can be overcome. 4. Rationalise the use of amniocentesis. 5. Narrate the reasons for population explosion, 6. Interprets the relation between MMR, IMR and population explosion. 7. Understand the need of contraception in the controlling 8. population explosion and in staying away from sexually transmitted disease (STD) 9. Identify various contraceptive methods, their use, advantage and their side effects. 10. Understand the role and need of MTP (Medical termination of Pregnancy) 11. Advocate for MTP. 12. Know about the cause and method of cure and how to prevent STDs. 13. Understand the reasons of infertility. 14. Aware of different assisted reproductive technology (ART) for 15. childless couple and their need for the society. | | |
| June | Chapter-5: Principles of Inheritance and Variation | <ol style="list-style-type: none"> 1. Mendel's experimental design. What was his innovation? 2. Understand the difference between dominant and recessive what is the difference between homozygous and heterozygous? 3. How do Punnett squares work and what are they used for? Testcross allows detection of heterozygotes | 3. Study the plant population frequency by quadrat method. | 8 periods + 8 periods |

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| | | <ol style="list-style-type: none"> 4. Mendel's First Law: Law of dominance and law of Segregation Dihybrid crosses, their ratio Mendel's Second Law: Independent Assortment 5. How do genes influence traits? 6. Non-Mendelian Inheritance Continuous variance. Pleiotropic effects Environmental Effects Co dominance 7. Theory of Chromosomal Inheritance, Sex-linked traits, Nondisjunction 8. Pedigrees – How do they work? What are they used for? | 4. Prepare a temporary mount of onion root tip to study mitosis. | |
| | Chapter-6: Molecular Basis of Inheritance | Students will be able to- Differentiate between transcription and translation. Differentiate between exon and intron Differentiate m-RNA and tRNA etc Explain transcription, translation, gene regulation. | | |
| July | Chapter-7: Evolution | Students will be able to- <ol style="list-style-type: none"> 1. Concept of origin of life 2. Biological evolution and its evidences. 3. Darwin's contribution with respect to modern synthetic theory of evolution. 4. Concept of natural selection and its types. 5. Gene flow and genetic drift. 6. Hardy Weinberg's principle its application. 7. Adaptive radiation and human evolution. | 5. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc. | 8 periods + 8 periods |
| | Chapter-8: Human Health and Diseases | Students will be able to- <ol style="list-style-type: none"> 1. Define disease and symptoms. 2. Differentiate between the infectious and non-infectious diseases. 3. Explain the mode of transmission of different diseases. 4. Describe the process of multiplication of HIV virus. 5. List out the name of microbes cause ringworm, filariasis, ascariasis and malaria. 6. Explain the function of immunity system in our body. 7. Know the importance of passive immunity during snake bites. 8. Explain the role of T-cell during organ transplantation. 9. Define cancer and its types. 10. Describe the harmful effects of drugs and alcohol abuse. 11. Apply their knowledge in day today life. | 5. T.S. of blastula through permanent slides (Mammalian). 6. Mendelian inheritance using seeds of different colour /sizes of any plant. | |

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| August | Chapter-10: Microbes in Human Welfare | <ol style="list-style-type: none"> 1. The students will be able to memorise the concepts of strategies for enhancement in food production. 2. The students will understand the techniques involved in Plant and Animal breeding. 3. The students will be able to apply these concepts in real life situations. 4. The students would be able to evaluate situations in which improvement in food production is involved. 5. The students would be able to create solutions for the problems in which Food Production needs to be enhanced. | <ol style="list-style-type: none"> 1. Flowers adapted to pollination by different agencies (wind, insects, birds). 2. Pollen germination on stigma through a permanent slide or scanning electron micrograph. | 8 periods + 8 periods |
| | Chapter-11: Biotechnology - Principles and Processes | <p>Students will be able to-</p> <ol style="list-style-type: none"> 1. They will be able to differentiate between DNA and Recombinant DNA 2. Between sparged and stirred tank bioreactor. 3. They can explain the use of selectable marker for selection of recombinant cells. 4. They can explain recombinant DNA technology. | <ol style="list-style-type: none"> 9. Common disease causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of diseases that they cause. | |
| September | Chapter-12: Biotechnology and its Applications | <ol style="list-style-type: none"> 1. Acquiring knowledge on applications in agriculture, human health care, forensic sciences formation of GMOs(Genetically Modified Organisms) or transgenic organisms. 2. World scenario of biotechnology and issues related to it like exploitation of animal rights, release of GMOs, biosafety etc. | <ol style="list-style-type: none"> 3. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice). | 10 periods + 10 periods |
| | Chapter-13: Organisms and Populations | <ol style="list-style-type: none"> 1. To describe behavioral and physiological mechanisms by which organisms interact with other organisms and with their physical environment. 2.To describe biotic and abiotic factors that influence the dynamics of Populations. 3. To describe how biogeochemistry, energy flow, or biodiversity of ecosystems responds to climate change or another disturbance. 4. To explain how we use ecological principles to explain the consequences of human activity current economic and social issues. | <p>Meiosis in onion bud cell or grasshopper testis through permanent slides.</p> | |

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| | | 5. To explain how we apply a mathematical or conceptual model to population or community dynamics. | | |
| October | Chapter-14: Ecosystem | <ol style="list-style-type: none"> 1. Students acquire knowledge about terms of chapter such as Biotic and abiotic components, productivity, decomposition, energy flow, nutrient recycling, detritus, humification, mineralization, standing crop, ecological succession etc. 2. Students able to justify the claim that free flow of solar energy is required support ecosystem dynamics. 3. They will be able to distinguish primary and secondary productivity, detritus and grazing food chain, standing crop and standing state, hydrarch and xerarch succession. 4. Students will be able to predict the changes in biotic community of a given abiotic environment. 5. They will be able to analyze the data to reach conclusion that flow of energy in an ecosystem is different from flow of matter. 6. They will be able draw conclusion that secondary succession is faster than primary succession and the nature of abiotic components determine the biotic community in an ecosystem. 7. Students able to use mathematical principles to compare and draw Conclusion about different ecological pyramids and net productivity. 8. Students able to explain the different steps in decomposition. 9. Students able to connect concepts of flow of energy through food Chain and food web. | <ol style="list-style-type: none"> 7. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour blindness. 8. Controlled pollination - emasculation, tagging and bagging. | 12 periods + 8 periods |
| | Chapter-15: Biodiversity and its Conservation | <p>Students are learning</p> <ol style="list-style-type: none"> 1. The basic concepts about the interrelation and co relation 2. of the individual in an ecosystem. Students are able to explain the importance of bio diversity for the existence of the entre life on the earth. 3. The importance of life form and their inter relationship by using different examples from their day to day life. Biodiversity is not mere the matter of verities of individual but the interrelationship with individuals of the living place. Explaining the relationship between individuals in terms of food and transfer of energy. 4. Explaining that every individual present in the ecosystem is having its own role to play for the balancing of ecosystem. Bio diversity can influence the productivity of an area. | | |

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| November | Preboard | | | |
| December | Preboard | | | |
| January | Preboard | | | |
| February | Revision- Exam | | | |
| March | Exam | | | |



MIS INTERNATIONAL SCHOOL

Yearly Planner (2024-25)

Grade: 12

Subject - English

Subject Incharge's name: Ms. Shreelekha Chitnis

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-------|-------------------------------|---|---|----------------|
| April | The Last Lesson | <p>comprehend the story.</p> <p>understand, enjoy and appreciate a wide range of text (different genre)</p> <p>understand the meaning and usage of phrases and statements</p> <p>To recognize the figures of speech used in the poem.</p> <p>To empathize with the poet's dilemma.</p> <p>To empathize with the feelings of guilt, pain and the poet's longing for her mother.</p> | <p>How would you react when you come to know that your mother tongue is snatched from you?</p> <p><input type="checkbox"/> Would you repent for not being sincere towards learning your mother tongue? Why/ Why not?</p> <p>The teacher presents a collage of a mother-daughter bonding. As a pre- reading session, the facilitator elicits responses from students, where they</p> | 4 |
| April | My mother at sixty six | <p>Comprehend an effective Poster making as a tool of Visual Communication</p> <p>1.To enable the pupil to have global and local comprehension of the text</p> <p>2. To help the students to understand the text and interpret the text in their own language</p> | <p>speaking of their relationship with their mother and what their mother means to them.</p> | 4 |

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| <p>August</p> | <p>Notice Writing (Writing Skills)</p> <p>Indigo</p> <p>THE ENEMY</p> <p>ON THE FACE OF IT</p> | <p>Identify the central/main point and supporting details, etc., to build communicative competence in various lexicons of English</p> <p>Fortifying empathy thereby promoting emotional intelligence and inculcating the ability to connect. Ensuring that the importance of genuineness, patience and openness is conveyed via the classroom transaction.</p> | <p>Do we experience things of beauty only for short moments or do they make a lasting impression on us? (Relational) Nature promises man comforts against all odds. But it is for man to recognize them. Explain</p> <p>Importance of decision making in adverse circumstances To understand that freedom is priceless and one should respect it. To know fundamental rights and duties.</p> <p>The lesson would be read aloud and explained. The historical background of the story and war related issues would be discussed. Questions/answers to be discussed in the classroom.</p> <p>Students are asked to browse the web to find out more about famous personalities who were differently abled. Character study of Lamb and Derry would engender trust and openness in students.</p> | |
| <p>September</p> | <p>Poets and Pancakes</p> | <p>Learners will develop an understanding on the connection between thinking and writing and demonstrate appropriate verbal and non-verbal skills.</p> | <p>EXPLANATION OF THE CONTENT WITH THE HELP OF PPT</p> <ol style="list-style-type: none"> 1. Today's film technology compared with that of the early days of film making in India. 2. | |

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| | <p>The Interview</p> | <p>They will enhance the knowledge of the subject content. Learners will be able to read literature with an appreciation of inter-relatedness of plot, character, theme and style.</p> <p>i) understand interview as communication genre. ii) enjoy an excerpt from an interview with an author iii)express personal opinion on the interview genre iv) know the opinions of eminent people about interview v) understand that the interview holds a position of unprecedented power and influence.</p> <p>1.To develop sympathy to show it towards poor deprived people. 2. To make the students aware about the existence of human tragedies and fears. 3. To develop interest in reading poems. 4. To enrich their vocabulary.</p> <p>1.To impart higher order language skills as well as the skill of thinking. 2. To widen the learner’s perspective, to develop the skills of reading, interpreting facts, identifying the central point and supporting details 3. To provide exposure to a wide variety of genres and themes. 4.To make extensive reading an enjoyable experience 5.To lead students to appreciate some of the best examples of writing and understand the social milieu they live in.</p> | <p>Do actors take away much of the success credits of a film than they deserve?</p> <p>compare different media of communication ii) understand the conversation and the interview pattern iii) understand the art of questioning and answering skills</p> <p>After the students have understood the ideas conveyed in the poem. - They discuss about the oblivious attitude of the city folk towards village people. Does the poet thinks in vain that it is inhuman to kill all the poor people. - and speak about the thinking of the poet that he should be killed so that he won’t see the miserable plight of the poor people.</p> <p>An insight into humiliations suffered by the marginalized communities and their relationship with the mainstream culture. Discuss.</p> | |
| | <p>A Roadside Stand</p> | | | |

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| | MEMORIES OF CHILDHOOD | | | |
| October | <p>GOING PLACES</p> <p>AUNT JENNIFER'S TIGERS</p> | <p>To facilitate making connections between Similar situations in different storylines/ life experiences- to make them accept the reality of life and shed away stubbornness. To be able to accept responsibility and devote their attention.</p> <p>The students will be able to:</p> <ul style="list-style-type: none"> • comprehend and appreciate the feminist aspects portrayed in the poem • empathize with harassed women • use the lexical items contextually • critically examine the theme of the poem • identify the different poetic devices used | <p>Express your views 'Dreams are extremely important, you cannot achieve it unless you imagine it.</p> <p>Discussion- Relating the feminist concerns raised in the poem to life and society Comprehension of pun used in the lexical items.</p> | |
| November | Revision-Exam | | | |
| December | Revision-Exam | | | |
| January | Prelims | | | |
| February | Prelims | | | |

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| March | Exams | | | |



MIS INTERNATIONAL SCHOOL

Yearly Planner (2023-24)

Grade: XI

Subject – General Studies

Subject In charge's name: Mr. Ram Gabale

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-----------|----------------------------|---|--|----------------|
| June/July | Science and society | <p>Students will be able to:</p> <p>Students will be able to</p> <ul style="list-style-type: none">• Promote transparency, collaboration, and interdisciplinary cooperation in scientific research.• Foster public engagement with science and technology, and encourage critical thinking about the impact of science and technology on society.• Ensure that scientific research and technological innovations are developed and used ethically and responsibly and with consideration to their social and environmental impacts. | <ul style="list-style-type: none">• Role-playing: Have students assume the roles of different stakeholders in a scientific issue, such as scientists, politicians, industry representatives, and citizens. Ask them to discuss and negotiate | 10 periods |

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| | | <ul style="list-style-type: none"> • Develop their critical thinking skills and ability to analyze the implications of scientific research and technological innovations. • Become aware of the ethical and social implications of scientific research and technological innovations, and will be encouraged to consider these implications when making decisions about the use of science and technology. • utilize their scientific knowledge and technological skills to serve for the betterment of the country and world at large | their respective interests and viewpoints. | |
| August/September | Contemporary problems of Indian society | <ul style="list-style-type: none"> • Students will be able to <ul style="list-style-type: none"> • Understand the impact of child labor that prevails in our country as a hindrance for social reforms. • Realize the importance of education for all and compare himself/herself to the underprivileged children/child who are engaged in labor for their livelihood. • Understand that poverty is the main reason for child labor. <p>Understand article – 24 which prevents child labour and prohibition of employment of children factories.</p> <ul style="list-style-type: none"> • Realize the adverse effects on the health progress of doing work in a factory or mine or engaged in any other hazardous employment. • Gain awareness and update themselves on the rules and regulations provided by the government for prevention, prohibition, eradication and rehabilitations of children and adolescent workers. | <ul style="list-style-type: none"> • Collect news of malnutrition from the old newspapers and journals regarding the recent death caused by malnutrition. • Collect information/date from underdeveloped states like Bihar, Odisha related to malnutrition. | 10 periods |

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| <p>October/ November</p> | <p>Career Pathways</p> | <p>Students will be able to</p> <ul style="list-style-type: none"> • Set goals and focus on the direction of their career goals and develop a scientific plan to achieve their goals. • Compare and differentiate from conventional career to the 21st century career and the skills needed to attain it. • Students will identify their strength and interests after a discussion with the counsellor and align their interests, skills and values under their guidance. • With help of career counselling, students acquire the required skills and knowledge for the jobs. | <p>Prepare a list of Career options available in today's market. • With the help of the Career counselors understand the job market within the country and outside the country to prepare themselves with the relevant skills.</p> <ul style="list-style-type: none"> • Preparing for the exams like SAT, IELTS, ACT, TOFEL, ASSET, etc. | <p>12 periods</p> |
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| December | Social Responsibility | <p>Students will be able to</p> <ul style="list-style-type: none"> • Understand the different types of Social Responsibilities like Environmental, ethical, philanthropic and economic responsibilities. • Analyze how to conserve the environment for the upcoming generations. <ul style="list-style-type: none"> • Students will be able to learn that it is their prime duty to save the environment for future generations to dwell happily. • Students will examine and identify the different types of pollution and spread the message of reducing harmful impact. | <p>Students can read success stories of people like Varun Sharma who had taken up the responsibility to bring electricity, education and empowerment to a remote tribal village in Odisha</p> <ul style="list-style-type: none"> • Nupur Ghuliani, a prospective chartered accountant gave up a lucrative career to work in rural India. • Ms Sudha Murthy, Chairperson, of Infosys Foundation is an educator, author and philanthropist. | 10 periods |
| January | Human Rights | Students will understand | Students will create an | 12 periods |

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| | | <ul style="list-style-type: none"> • The intent of the UDHR by discovering the Universal declaration. • The purpose and the legal effect of the Universal Declaration of Human Rights. • Human rights, their responsibilities to protect the rights and modern human rights. • UN guiding principles on Business and Human rights. | <p>action plan to execute and assess the concerns. They will address the issues found in the society through a letter to the concerned department.</p> <ul style="list-style-type: none"> • Students will create a sample petition based on their understanding | |
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MIS INTERNATIONAL SCHOOL , Balewadi
Yearly Planner (2024-25)

Grade: XII

Subject -Chemistry

Subject Incharge's name: Vibhawari Gajghate

| Month | Course Description | Learning Outcomes | Activities | No. of Periods |
|-----------------|--|--|---|----------------|
| March/ April | Chapter 1. Solutions Chapter: 3 Chemical kinetics | <p>After studying this unit students will be able to:</p> <ul style="list-style-type: none">Describe the formation of different types of solutionsExpress concentration of solution in different unitsState and explain Henry's law and Raoult's lawUnderstand the difference between ideal and non ideal solutionsExplain the deviations of real solutions from Raoult's lawDescribe the colligative properties of solutionsExplain abnormal colligative properties and correlate these to association or dissociation of the specific entity <p>Chemical kinetics</p> <ul style="list-style-type: none">students will be able to :To describe an average and instantaneous rate of a reaction.Calculate the order of a reaction. | <p>To Prepare Colloidal Solution (sol) of Starch</p> <p>To Prepare Ferric Hydroxide sol</p> | 14 |

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| June | <p>Chapter: 3 Chemical kinetics</p> <p>Chapter : 10 Biomolecules</p> | <ul style="list-style-type: none"> • Derive integrated rate equations for zero, first order reactions and solve numericals based on it • Analyse the collision theory and explain the effect of temperature <p>Biomolecules Students will be able to :</p> <ul style="list-style-type: none"> • Define the biomolecules like carbohydrates, proteins and nucleic acids; • Classification of carbohydrates, preparation and structure of glucose , disaccharides and polysaccharides • Proteins, Amino acids • Enzymes and vitamins and its classification • Nucleic acids and its structure • Explain the difference between DNA and RNA | <p>Effect of concentration on the rate of reaction between Sodium Thiosulphate and Hydrochloric acid</p> <p>Effect of temperature on the rate of reaction between Sodium Thiosulphate and Hydrochloric acid</p> <p>paper chromatography and determination of R_f values.</p> | 12 |
| July | Chapter 6: Haloalkane and haloarenes | <p>The students will understand and will be able to write</p> <ul style="list-style-type: none"> • Nomenclature of haloalkanes and haloarenes according to the IUPAC system • Physical and chemical properties of haloalkanes, haloarenes • Electrophilic substitution reaction given by haloarenes. • Mechanism of SN₁& SN₂ reaction • Stereo chemical aspects of nucleophilic substitution reaction i.e. inversion, retention and racemisation of configuration. | <ul style="list-style-type: none"> • Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum • Preparation of Organic Compounds • Tests for Functional Groups present in organic compounds | 12 |

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| | Chapter–7: Alcohol ,phenol and ether | <ul style="list-style-type: none"> • Beneficial and hazardous effects of poly halogen compound. <p>Student will be able to</p> <ul style="list-style-type: none"> • To name alcohols, phenols and ethers according to the IUPAC system of nomenclature • The reactions involved in the preparation of alcohols from alkenes (ii) aldehydes, ketones and carboxylic acids • Phenols from (i) haloarenes (ii) benzene sulphonic acids (iii) diazonium salts and (iv) cumene • Ethers from (i) alcohols (ii) alkyl halides and sodium alkoxides/aryloxides <ul style="list-style-type: none"> • Difference in physical properties on the basis of intermolecular forces. • Chemical properties of alcohol, phenol and ethers and corresponding chemical equations | <ul style="list-style-type: none"> • Characteristic tests of carbohydrates, fats, and proteins in pure samples and their detection in given foodstuffs | 12 |
| August | Chapter–7: Alcohol ,phenol and ether Chapter 8: Aldehydes, ketones and carboxylic acid• | <ul style="list-style-type: none"> • Electrophilic substitution reaction of phenol and aromatic ethers. • Uses of alcohol, phenol and ethers <p>Aldehydes and ketones : the students will be able to write IUPAC names of aldehydes, ketones and carboxylic acids</p> <ul style="list-style-type: none"> • understand and become aware of important methods of preparation and | <p>Determination of concentration/ molarity of KMnO_4 solution by titrating it against a standard solution of:</p> <ul style="list-style-type: none"> • Oxalic Acid • Ferrous Ammonium Sulphate <p>Enthalpy of neutralization of strong acid (HCL) and strong base (NaOH)</p> | 16 |

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| | | <p>reactions of aldehydes ,ketones and carboxylic acid</p> <ul style="list-style-type: none"> • Will understand and be able to write physical properties and chemical reactions, with their structures •Mechanism of a few selected reactions of aldehydes and ketones | | |
| september | <p>Chapter 8: Aldehydes, ketones and carboxylic acid•</p> <p>Chapter : 9 Amines</p> | <ul style="list-style-type: none"> • Factors affecting the acidity of carboxylic acids and their reactions • uses of aldehydes, ketones and carboxylic acids <p>After studying this unit student will be able to:</p> <ul style="list-style-type: none"> • Name primary ,secondary and tertiary amines • Method of preparation of amines and their properties, distinguishing tests for primary, secondary and tertiary amine • Diazonium salts : its preparation ,physical and chemical properties. | <p>Determination of one cation and one anion in a given salt</p> | <p>16</p> <p>12</p> |
| October | Chapter– 2: Electrochemistry | <p>Electrochemistry</p> <ul style="list-style-type: none"> • Electrochemical cell and difference between galvanic and electrolytic cells • Nernst equation for calculating the emf of galvanic cell and standard potential of the cell • Relation between standard potential of the cell • Gibbs energy of cell reaction and its equilibrium constant | | 16 |

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| | | <ul style="list-style-type: none"> • preparation, properties, structures and uses of some important compounds such as $K_2Cr_2O_7$ and $KMnO_4$ • properties of the f-block elements and comparative account of the lanthanoids and actinoids with respect to their electronic configurations, oxidation states and chemical behaviour. | | |
| December | Chapter: 4 D and F Block element | Contd. | | |
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| PT -1: | Solution Chemical kinetics |
| PT -2 | Biomolecules Haloalkane and haloarenes Alcohol phenol ether Aldehyde and ketone |
| PT -3 : | Amines Electrochemistry Coordination chemistry |
| Final Exam | Full portion |