

Bridge Course Syllabus of English

Total Periods : 48 periods (1 period per hour)
Theory : 06 periods per week
Practical : 06 periods per week

Aim :

To develop students' sense of understanding, appreciation and ability of expression.

Objective :

The Students will be able to understand the subject matters taught through English medium of teaching and be expressive in a better way.

Topic - wise distribution of periods

Theory

Sl. No.	Topics	Periods
1	Grammar	08
2	Vocabulary Building	03
3	Reading	06
4	Writing Skill	07
	Total	24

Practical

Sl. No.	Topics	Periods
1	Reading Skill	07
2	Listening Skill	07
3	Speaking Skill	10
	Total	24

N. B Speaking will be an integral part of each section of the curriculum. The teacher is to take personal care regarding this.

THEORY

1. Grammar 08 hrs
 - 1.1 Basic idea on parts of speech and sentence
 - 1.2 Fundamentals of verbs
 - 1.3 Tense, Tense forms and applications
 - 1.4 Subject - Verb - Agreement (Concord)

2. Vocabulary Building 03 hrs
 - 2.1 Synonyms, antonyms, Homonyms
 - 2.2 One-word substitutes
 - 2.3 Word formation

- 3. Reading** **06 hrs**
- 3.1 Importance of Reading
 - 3.2 Types of Reading
 - a) Loud Reading
 - b) Silent Reading
 - 3.3 Reading for meaning

- 4. Writing Skill** **07 hrs**
- 4.1 Describing person, situation, pictures (given)
[Describing family members, teacher, favourite actor / player etc; describing any situation that they usually meet with at home and Institution etc.]
 - 4.2 Summary Writing
[Above writing may be practiced in a way such as to develop them into paragraphs]

PRACTICAL

- 1. Reading Skill** **07 hrs**
- 1.1 Reading aloud of given texts [passages from different areas of study, poems focusing on rhythm and intonation, reading news-paper items]
 - 1.2 Memorising data from the reading text and representing the same in simpler English.
- 2. Listening Skill** **07 hrs**
- 2.1 Listening to passages, speeches, dialogues, poems with proper rhythm and intonation.
 - 2.2 To express what they remember from the listening task both data-wise and meaning-wise.
- 3. Speaking Skill** **10 hrs**
- 3.1 Self - introduction
 - 3.2 Role-plays (This may be done in a bi-lingual method incase situation demands).

Bridge Course Syllabus of Mathematics

Total Periods : 48 (1 period per hour)

Aim :

To bridge up the gap between 10th standard and Diploma Course Mathematics.

Objective :

The Students will be able to understand the subject matters of Mathematics and can able to express the Fundamental Idea.

Topic - wise distribution of periods

Sl. No.	Topics	Periods
1	Trigonometry	15
2	Algebra	18
3	Analytic Geometry	15

1. Trigonometry

15 hrs

1.1 Trigonometric Ratios in terms of perpendicular, Base & Height. Reciprocal of Six Trigonometrical ratios. Idea about $\sin^2\theta + \cos^2\theta = 1$, $\sec^2\theta - \tan^2\theta = 1$, $\operatorname{cosec}^2\theta - \cot^2\theta = 1$

Idea about Quadrant like $\frac{\pi}{2} - \theta$, $\frac{\pi}{2} + \theta$, $\pi - \theta$, $\pi + \theta$

1.2 Compound Angle

Idea about $\sin(A+B)$, $\sin(A-B)$, $\cos(A+B)$, $\cos(A-B)$, $\tan(A+B)$, $\tan(A-B)$, $\cot(A+B)$, $\cot(A-B)$,

Idea about $\sin C + \sin D$, $\sin C - \sin D$, $\cos C + \cos D$, $\cos C - \cos D$

1.3. Multiple Angle & Sub-multiple Angle

Idea about $\sin 2A$, $\cos 2A$, $\tan 2A$, $\sec 2A$, $\operatorname{cosec} 2A$, $\cot 2A$ & $\sin 3A$, $\cos 3A$, $\tan 3A$, $\cot 3A$

Idea about $\sin \frac{A}{2}$, $\cos \frac{A}{2}$, $\tan \frac{A}{2}$, $\cot \frac{A}{2}$

Idea about $\sin \frac{A}{3}$, $\cos \frac{A}{3}$, $\tan \frac{A}{3}$, $\cot \frac{A}{3}$

2. Algebra

18 hrs

2.1 Algebraic Formulae

Idea about $(a+b)^2$, $(a-b)^2$, $(a+b)^3$, $(a-b)^3$, $a^2 - b^2$

2.2 Idea about factorization.

2.3 Solution of Simultaneous linear equation involving two variables

$A_1x + B_1y + c_1 = 0$ and $A_2x + B_2y + c_2 = 0$

2.4 Quadratic Equation

Idea about quadratic equation & its solution

2.5 Laws of Indices

$$a^x \cdot a^y = a^{x+y}, a > 1$$

$$\frac{a^x}{a^y} = a^{x-y}, a > 1$$

2.6 Properties of Logarithm & change of base

$$\text{Log } x + \text{Log } y = \text{Log } xy, \text{Log } x - \text{Log } y = \text{Log } \frac{x}{y}, \text{Log } x^m = m \text{Log } x, \log_b a = \frac{\log_e a}{\log_e b}$$

2.7 Idea about factorial notation & Idea about series expansion like

$$(a + b)^n = c_0 a^n + c_1 a^{n-1} b + c_2 a^{n-2} b^2 + \dots + c_n b^n$$

2.8 Relation and Function

Constant, Variable, Fundamental Idea about relations & functions (including domain & range)

3. Analytic Geometry

15 hrs

3.1 Cartesian Co-ordinate System

3.2 Derivation of formula for Distance between two given points and division between two given points in the ratio $m : n$ (externally and internally)

3.3 Definition of slope, condition for perpendicularity and parallelism of two lines

3.4 Locus & its equation

3.5 Fundamentals idea about differentiation & Integration (only formulae)

BRIDGE COURSE SYLLABUS FOR CHEMISTRY

Total Period : 30 (1Period = 1 Hr)

06 Periods per week

Objective: The main objective of introducing this syllabus will acquire the students about basics of Chemistry which is highly essential for a student to read Chemistry more.

Course Curriculum:

<u>Sl. No.</u>	<u>Topic</u>	<u>Periods</u>
1	Matter	02
2.	Symbols, Valency	02
3.	Radicals	02
4.	Formula	02
5.	Chemical Equation	06
6.	Basic Concept of Atomic Structure	05
7.	Mole Concept	03
8.	Metal & Metallurgy	03
9.	Introduction to organic Chemistry	05
	Total	30 periods.

Details of Topics

1. Matter

Defintions ofMatter, atom, Molecule, elements, compound and Mixture.

2. Symboles & Valency

Definition, Symboles of different elements, Definition of valency, variable valency with examples.

3. Readocal:

Definition and classifications of different radicals with examples.

4. Formula

Definition, steps to write a formula and names of compound from formula.

5. Chemical Equation

Definition, Criteria of a Chemical equation. Balancing equations by Hit and Trial Method, Partial equation method.

6. Basic concept of Atomic Structure

Concept of Dalton's Atomic Theory & Molecular Theory, Discovery of electron, proton and neutron, Atomic number and mass number, isotopes, isobars with examples.

7. Mole Concept

Moles, Avogadro's number, Atomic weight, calculation of molecular weight from Atomic weight.

8. Metals & Metallurgy

Metals, Non metals and Metalloids with example, Difference between metals and non metals
Definitions of Mineral, Ore and gangue with example.

9. Introduction to Organic Chemistry

Organic compound, Comparison between Organic and Inorganic compound, Functional group, Homologous series (Alkane, Alkene, Alkyne, Alkyl, halide, Alcohol).

SYLLABUS FOR BRIDGE COURSE

SUBJECT : PHYSICS.

TOTAL PERIODS : 30

TOPIC-WISE DISTRIBUTION OF PERIODS :

Sl no.	Topics	Periods
01	Fundamentals of Physical quantities	06
02	Fundamentals of Mechanics	08
03	Gravitation & Waves	04
04	Heat Phenomena	03
05	Optics	03
06	Electricity & Magnetism	06

Unit 1 : Fundamentals of Physical quantities (6 Periods)

Units, System of units.

Dimensions of Some Physical quantities

Scalars and Vector quantities

Types of vector, Resolution of vector

Vector addition , triangle law, Parallelogram law (no derivation)

Unit 2 : Fundamentals of Mechanics (8 Periods)

Concept of rest and motion

Displacement, velocity, acceleration

Displacement-time graph, velocity-time graph

Equations of motion (no derivation)

Newton's laws of motion

Momentum, Force (concept only)

Work, power, energy (concept only)

Concept of circular motion

Unit 3 : Gravitation & Waves (4 periods)

Newton's Laws of Gravitation (Statement)

Relation between g & G

Types of Waves

Wave Parameters

Unit 4 : Heat Phenomena (3 Periods)

Concept of Heat & Temperature

Specific Heat, Latent Heat

Principle of Calorimetry

Unit 5 : Optics (3 Periods)

Laws of Reflection

Laws of Refraction

Refractive Index

Refraction through a lens

Unit 6: Electricity & Magnetism (6 Periods)

Terms related to Electricity (Electric Charge, Force, Electric Field Intensity, Potential Difference, Capacitance etc.)

Force between Charges

Concept of Electric Current & Ohm's Law

Grouping of Resistances

Concept of Magnetism

Force between two magnetic Poles

Magnetic Lines of Force