STATE COUNCIL FOR TECHNICAL EDUCATION & VOCATIONAL TRAINING, ODISHA

ରାଜ୍ୟ ବୈଷୟିକ ଶିକ୍ଷା ଓ ପ୍ରଶିକ୍ଷଣ ପରିଷଦ, ଓଡ଼ିଶା

No. 1416 / Dated 19.7.2025

To

Principals of All Polytechnics
(Govt & Private)

Sub: Revised Bridge Course Syllabus effective for 1st Semester Students from Academic Session 2025-26.

Sir/Madam

In inviting a reference to the above cited subject, the Revised Bridge Course Syllabus effective for 1st Semester students from Academic Session 2025-26 is enclosed herewith for implementation at your end.

There will be 4 periods of theory class every day in the 1st half which should be interactive sessions. The 2nd half will be utilized for other activities so as to generate interest among students towards the Diploma courses. The syllabus is to be completed in 2 Week time

Encl: As above

Yours faithfully

19/7/25

Secretary SCTE&VT

Bridge Course Syllabus of English

Topic Wise distribution of Periods: Total Periods: 08

SL. NO.	Topics	Periods
1	Listening skill	02
2	Speaking skill	02
3	Reading skill	02
4	Writing skill	02

1. **Listening Skill.** **(02 periods)**

1.1 -Listening to passages, speeches, dialogues, stories.

1.2-Recollect the information they have gathered.

2. **Speaking skill.** **(02 periods)**

2.1- Self Introduction

2.2-Role play

3. **Reading skill.** **(02 periods)**

3.1- Reading aloud of given texts (passages of different areas of study, articles from newspaper) focusing on intonation.

4. **Writing skill.** **(02 periods)**

4.1- Review of punctuation rules.

4.2- Formation of basic sentence structure.

Secretary
State Council for Technical Education &
Vocational Training, Odisha, Bhubaneswar.

Bridge Course of Applied Chemistry

Topic wise distribution of periods

Total periods: 08

Sl. No.	Topics	periods
1	Composition of matters	01
2	Writing Chemical Formulae	02
3	Atoms and molecules	01
4	Chemical bonds	01
5	Solutions	01
6	Basic concept of Atomic Structure	02

1. **Composition of Matters**
   - i. Elements (Metals, Non-metals, Metalloids),
   - ii. Compounds and Mixture.
2. **Writing Chemical formulae**
   - i. Symbols, valency and chemical formulae.
   - ii. Steps involved in writing chemical formulae.
3. **Atoms and Molecules**
   - i. Atomic number,
   - ii. Atomic mass and molecular mass.
4. **Chemical Bonds**
   - i. Basic idea on chemical bond
   - ii. Octet rule.
5. **Solutions**
   - i. Acids, bases and salts.
   - ii. Solute, solvent and solution.
6. **Atomic structure**
   - i. Electrons, protons and neutrons.
   - ii. Introduction to different atomic models (brief).

Secretary
State Council for Technical Education &
Vocational Training, Odisha, Bhubaneswar.

Bridge Course Syllabus of Mathematics

Total Periods- 18

Aim:

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

Objective:

The students will be able to understand the fundamentals of Mathematics.

Topic wise distribution of Periods:

Sl. No.	Topics	Periods
1	Basic Terminologies	01
2	Algebra	09
3	Trigonometry	05
4	Co-ordinate Geometry	03

1. **Basic Terminologies:**
   Angle, Arc, Radius, Hypotenuse, Height, Base, Perpendicular, Point, Co-linear Points, Straight Line, Triangle, Median, Centroid, Circle, Centre, Diameter, Sphere, Plane, Rectangle, Square, Parallelogram, Rhombus, Cuboid, Cube, Equation, Linear Equation, Quadratic Equation, Polynomial, Root, Length, Area, Volume etc.
2. **Algebra:**
   2.1 Algebraic formulas
   $(a + b)^2$, $(a - b)^2$, $(a + b)^3$, $(a - b)^3$, $a^2 - b^2$, $a^3 + b^3$, $a^3 - b^3$ etc.
   2.2 Solution of simultaneous linear equation involving two variables
   $a_1x + b_1y + c_1 = 0$, $a_2x + b_2y + c_2 = 0$
   2.3 Quadratic Equation
   Quadratic Equation and its solution.
   2.4 Concepts of Polynomials with factorization (Including Polynomial Division)
   2.5 Law of Indices
   $a^m \cdot a^n = a^{m+n}$.
   $a^m / a^n = a^{m-n}$, $(a^m)^n = a^{mn}$, $a^0 = 1$, $a^{-n} = 1 / a^n$
3. **Trigonometry:**
   3.1 Trigonometric ratios in terms of Perpendicular, Base and Hypotenuse, Reciprocal of six trigonometric ratios, Trigonometric table, Quadrants (ASTC rule), Trigonometric identities ($\sin^2\theta + \cos^2\theta = 1$, $\sec^2\theta - \tan^2\theta = 1$, $\operatorname{cosec}^2\theta - \cot^2\theta = 1$).
   3.2 Compound Angle
   $\sin(A + B)$, $\sin(A - B)$, $\cos(A + B)$, $\cos(A - B)$, $\tan(A + B)$, $\tan(A - B)$, $\sin C + \sin D$, $\sin C - \sin D$, $\cos C + \cos D$, $\cos C - \cos D$ etc.
   3.3 Multiple Angle
   $\sin 2A$, $\cos 2A$, $\tan 2A$, $\sin 3A$, $\cos 3A$, $\tan 3A$ etc.
4. **Co-ordinate Geometry:**
   4.1 Introduction to Cartesian co-ordinate system
   4.2 Distance between two points (derivation and applications)
   4.3 Section Formula (Internal division and External division)

Secretary
State Council for Technical Education & Vocational Training, Odisha, Bhubaneswar.

Bridge Course of Applied Physics

Topic wise distribution of periods **Total periods: 12**

Sl. No.	Topics	periods
1	Terminology and Translation of Physical Quantities Commonly used	01
2	Basic Concepts to be explained	03
3	Fundamental Concepts of Mechanics	04
4	Concepts of Heat and Thermometry	04

Unit-1 Terminology and Translation of Physical Quantities Commonly used

Mass, Length, Time, speed, Distance, displacement, velocity, Acceleration, Force, Momentum, Work, Power, Energy (KE & PE), Friction, Pressure, Density, Area, Volume.

Unit-2 Basic concepts to be explained

Mass, Length, Time, speed, Distance, displacement, velocity, Acceleration, Force, Momentum, Work, Power, Energy (KE & PE), Friction, Pressure, Density, Area, Volume, Temperature and Heat.

Unit-3 Fundamental Concepts of Mechanics

i. Concept of rest and motion.
ii. Equations of motion along a straight line for constant acceleration (derivation excluded).
iii. Newton's laws of motion (Basic concepts only)
iv. Resolution of force and its components.

Unit- 4 Concepts of Heat and Thermometry

i. Concept of Heat and Temperature.
ii. Different scales of temperature and their relationship.
iii. Basic concepts of heat transfer: Conduction, Convection and Radiation.

Secretary
State Council for Technical Education & Vocational Training, Odisha, Bhubaneswar.