GOVERNMENT OF TAMIL NADU
DEPARTMENT OF TECHNICAL EDUCATION
DIPLOMA IN ENGINEERING & TECHNOLOGY
REGULATION 2023

SEMESTER – I

| ## | Course Category | Course Type | Code | Course Title | L-T-P | Period | Credit | End Exam |
|---|---|---|---|---|---|---|---|---|
| 1 | Humanities & Social Science | Theory | TA231110 | Tamil Marabu | 2-0-0 | 30 | 2 | Theory |
| 2 | Basic Science | Theory | MA231120 | Basic Mathematics | 3-1-0 | 60 | 4 | Theory |
| 3 | Basic Science | Practicum | PH231330 | Basic Physics | 2-0-2 | 60 | 3 | Theory |
| 4 | Basic Science | Practicum | CH231340 | Basic Chemistry | 2-0-2 | 60 | 3 | Theory |
| 5 | Humanities & Social Science | Practicum | EN231350 | Communicative English I | 1-0-2 | 45 | 2 | Practical |
| 6 | Engineering Science | Practicum | WP231360 | Basic Workshop Practices | 1-0-2 | 45 | 2 | Practical |
| 7 | Engineering Science | Practical | DS231270 | Digital Workplace Skills | 0-0-4 | 60 | 2 | Practical |
| 8 | Open Elective | Advanced Skill Certification | BE231280 | Basic English for Employability | 0-0-4 | 60 | 2 | Practical |
| 9 | Humanities & Social Science | Integrated Learning Experience | - | Growth Lab | - | 15 | 0 | - |
| 10 | Audit Course | Integrated Learning Experience | - | Induction Program - I | - | 40 | 0 | - |
| 11 | Audit Course | Integrated Learning Experience | - | I&E/ Club Activity/ Community Initiatives | - | 30 | 0 | - |
| 12 | Audit Course | Integrated Learning Experience | - | Shop Floor Immersion | - | 8 | 0 | - |
| 13 | Audit Course | Integrated Learning Experience | - | Health & Wellness | - | 30 | 0 | - |
| 14 | Audit Course | Integrated Learning Experience | - | Student-Led Initiative | - | 22 | 0 | - |
| **TOTAL** | | | | | | **565** | **20** | |

Note: Test & Revisions: 60 Periods | Library Hours: 15 Periods

| TA231110 | தமிழர் மரபு | L | T | P | C |
|---|---|---|---|---|---|
| Theory | Tamil Marabu | 2 | 0 | 0 | 2 |

## Introduction

This course provides an opportunity for students who have Tamil as their mother tongue and for students from other states to have multifold outcomes. Learning in the mother tongue is a key factor for inclusion and quality learning, and it also improves learning outcomes and academic performance. This is crucial, for appreciation of Tamil as a language and as a culture. It fosters mutual understanding and respect for one another and helps preserve the wealth of cultural and traditional heritage that is embedded in Tamil language around the world.

## Course Objectives

The objective of this course is to enable the student to

Appreciate Tamil art, culture and literature
Learn the history and culture of Tamil language
Relate to various art forms and their relevance to development
Acknowledge the rich heritage and significant achievements of the Tamilians
Appreciate the contribution of Tamilians to nation building

## Course Outcomes

After successful completion of this course, the students should be able to

CO1: Understand the significance of Tamil as a classical language
CO2: Relate the art and culture in Tamil language
CO3: Explain the importance of music, dance and martial arts that were derived from Tamil Culture
CO4: Understand the poetic mode or theme of classical language
CO5: Relate the contribution of Tamils to Nation building

## Pre-requisites

Nil

| TA231110 | தமிழர் மரபு | L | T | P | C |
|---|---|---|---|---|---|
| Theory | Tamil Marabu | 2 | 0 | 0 | 2 |

## CO/PO Mapping

| CO / PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 |
|---|---|---|---|---|---|---|---|
| CO1 | | 3 | | | 2 | | 2 |
| CO2 | | 3 | | | 2 | | 2 |
| CO3 | | 3 | | | 2 | | 2 |
| CO4 | | 3 | | | 2 | | 2 |
| CO5 | | 3 | | | 2 | | 2 |

*Legend: 3-High Correlation, 2-Medium Correlation, 1-Low Correlation*

## Instructional Strategy

- It is advised that teachers take steps to pique pupils' attention and boost their curosity to learn.
- Apply story telling methods to pictures the realistic situations, and real-world examples to make the sessions engaging.
- Connecting to physical spaces, renowned scholars and researchers shall help students learn from the experts.
- Throughout the course, providing pre-reading and post-reading materials/videos may help sustain the interest through class discussions and debates.

## Assessment Methodology

| | Continuous Assessment (40 marks) | | | | End Semester Examination (60 marks) |
|---|---|---|---|---|---|
| | CA1 | CA2 | CA3 | CA4 | |
| Mode | Written Test | Written Test | Assignment | Quiz/MCQ/ Activity/ Assignment | Written Examination |
| Duration | 2 hours | | | 1 Hour | 3 hours |
| Exam Marks | 30 | 30 | 30 | 10 | 100 |
| Converted to | 15 | 15 | 15 | 10 | 60 |
| Marks | Best of CA1 & CA2 15 Marks | | CA3 & CA4 25 marks | | 60 |

| TA231110 | தமிழர் மரபு | L | T | P | C |
|---|---|---|---|---|---|
| Theory | Tamil Marabu | 2 | 0 | 0 | 2 |

| | | |
|---|---|---|
| **அலகு I** | **மொழி மற்றும் இலக்கியம்** | |
| இந்திய மொழிக் குடும்பங்கள் - திராவிட மொழிகள் - தமிழ் ஒரு செம்மொழி - தமிழ் செவ்விலக்கியங்கள் - சங்க இலக்கியத்தின் சமயச் சார்பற்ற தன்மை - சங்க இலக்கியத்தில் பகிர்தல் அறம் - திருக்குறளில் மேலாண்மைக் கருத்துக்கள் - தமிழ்க் காப்பியங்கள் - தமிழகத்தில் சமண பௌத்த சமயங்களின் தாக்கம் - பக்தி இலக்கியம் : ஆழ்வார்கள் மற்றும் நாயன்மார்கள் - சிற்றிலக்கியங்கள் - தமிழில் நவீன இலக்கியத்தின் வளர்ச்சி - தமிழ் இலக்கிய வளர்ச்சியில் பாரதியார் மற்றும் பாரதிதாசன் ஆகியோரின் பங்களிப்பு. | | 6 |
| **அலகு II** | **மரபு - பாறை ஓவியங்கள் முதல் நவீன ஓவியங்கள் வரை - சிற்பக் கலை** | |
| நடுகல் முதல் நவீன சிற்பங்கள் வரை - ஐம்பொன் சிலைகள்- பழங்குடியினர் மற்றும் அவர்கள் தயாரிக்கும் கைவினைப் பொருட்கள், பொம்மைகள் - தேர் செய்யும் கலை - சுடுமண் சிற்பங்கள் - நாட்டுப்புறத் தெய்வங்கள் - குமரிமுனையில் திருவள்ளுவர் சிலை - இசைக் கருவிகள் - மிருதங்கம், பறை, வீணை, யாழ், நாதஸ்வரம் -தமிழர்களின் சமூக பொருளாதார வாழ்வில் கோவில்களின் பங்கு | | 6 |
| **அலகு III** | **நாட்டுப்புறக் கலைகள் மற்றும் வீர விளையாட்டுகள்** | |
| தெருக்கூத்து, கரகாட்டம், வில்லுப்பாட்டு, கணியான் கூத்து, ஒயிலாட்டம், தோல்பாவைக் கூத்து, சிலம்பாட்டம், வளரி, புலியாட்டம், தமிழர்களின் விளையாட்டுகள். | | 6 |
| **அலகு IV** | **தமிழர்களின் திணைக் கோட்பாடுகள்** | |
| தமிழகத்தின் தாவரங்களும், விலங்குகளும் - தொல்காப்பியம் மற்றும் சங்க இலக்கியத்தில் அகம் மற்றும் புறக் கோட்பாடுகள் - தமிழர்கள் போற்றிய அறக்கோட்பாடு - சங்ககாலத்தில் தமிழகத்தில் எழுத்தறிவும், கல்வியும் - சங்ககால நகரங்களும் துறை முகங்களும் - சங்ககாலத்தில் ஏற்றுமதி மற்றும் இறக்குமதி - கடல் கடந்த நாடுகளில் சோழர்களின் வெற்றி | | 6 |
| **அலகு V** | **இந்திய தேசிய இயக்கம் மற்றும் இந்திய பண்பாட்டிற்குத் தமிழர்களின் பங்களிப்பு** | |
| இந்திய விடுதலைப்போரில் தமிழர்களின் பங்கு - இந்தியாவின் பிறப்பகுதிகளில் தமிழ்ப் பண்பாட்டின் தாக்கம் - சுயமரியாதை இயக்கம் - இந்திய மருத்துவத்தில், சித்த மருத்துவத்தின் பங்கு- கல்வெட்டுகள், கையெழுத்துப்படிகள் - தமிழ்ப் புத்தகங்களின் அச்சு வரலாறு | | 6 |
| TOTAL | | 30 |

| TA231110 | தமிழர் மரபு | L | T | P | C |
|---|---|---|---|---|---|
| Theory | Tamil Marabu | 2 | 0 | 0 | 2 |

| | | |
|---|---|---|
| Unit I | LANGUAGE AND LITERATURE | |
| Language Families in India - Dravidian Languages – Tamil as a Classical Language - Classical Literature in Tamil – Secular Nature of Sangam Literature – Distributive Justice in Sangam Literature - Management Principles in Thirukural - Tamil Epics and Impact of Buddhism & Jainism in Tamil Land - Bakthi Literature Azhwars and Nayanmars - Forms of minor Poetry - Development of Modern literature in Tamil - Contribution of Bharathiyar and Bharathidhasan. | | 6 |
| Unit II | HERITAGE - ROCK ART PAINTINGS TO MODERN ART – SCULPTURE | |
| Hero stone to modern sculpture - Bronze icons - Tribes and their handicrafts - Art of temple car making - Massive Terracotta sculptures, Village deities, Thiruvalluvar Statue at Kanyakumari, Making of musical instruments - Mridhangam, Parai, Veenai, Yazh and Nadhaswaram - Role of Temples in Social and Economic Life of Tamils | | 6 |
| Unit III | FOLK AND MARTIAL ARTS | |
| Therukoothu, Karagattam, Villu Pattu, Kaniyan Koothu, Oyillattam, Leather puppetry, Silambattam, Valari, Tiger dance - Sports and Games of Tamils. | | 6 |
| Unit IV | THINAI CONCEPT OF TAMILS | |
| Flora and Fauna of Tamils & Aham and Puram Concept from Tholkappiyam and Sangam Literature - Aram Concept of Tamils - Education and Literacy during Sangam Age - Ancient Cities and Ports of Sangam Age - Export and Import during Sangam Age - Overseas Conquest of Cholas. | | 6 |
| Unit V | CONTRIBUTION OF TAMILS TO INDIAN NATIONAL MOVEMENT AND INDIAN CULTURE | |
| Language Families in India - Dravidian Languages – Tamil as a Classical Language - Classical Literature in Tamil – Secular Nature of Sangam Literature – Distributive Justice in Sangam Literature - Management Principles in Thirukural - Tamil Epics and Impact of Buddhism & Jainism in Tamil Land - Bakthi Literature Azhwars and Nayanmars - Forms of minor Poetry - Development of Modern literature in Tamil - Contribution of Bharathiyar and Bharathidhasan. | | 6 |
| TOTAL HOURS | | 30 |

**Suggested List of Students Activity**

- A team activity to prepare a poster on any one module
- An elocution competition in the class for 3 minutes on any particular topic/any topic from the syllabi
- An essay writing on the topic of interest

| TA231110 | தமிழர் மரபு<br>Tamil Marabu | L | T | P | C |
|---|---|---|---|---|---|
| Theory | | 2 | 0 | 0 | 2 |

**Text Books**

- தமிழக வரலாறு – மக்களும் பண்பாடும் – கே.கே. பிள்ளை (வெளியீடு: தமிழ்நாடு பாடநூல் மற்றும் கல்வியியல் பணிகள் கழகம்).
- கணினித்தமிழ் – முனைவர் இல. சுந்தரம். (விகடன் பிரசுரம்).
- கீழடி – வைகை நதிக்கரையில் சங்ககால நகர நாகரிகம் (தொல்லியல் துறை வெளியீடு)
- பொருநை – ஆற்றங்கரை நாகரிகம். (தொல்லியல் துறை வெளியீடு)
- Social Life of Tamils (Dr.K.K.Pillay) A joint publication of TNTB & ESC and RMRL
- Social Life of the Tamils - The Classical Period (Dr.S.Singaravelu) (Published by: International Institute of Tamil Studies.
- Historical Heritage of the Tamils (Dr.S.V.Subatamanian, Dr.K.D. Thirunavukkarasu) (Published by: International Institute of Tamil Studies).
- The Contributions of the Tamils to Indian Culture (Dr.M.Valarmathi) (Published by: International Institute of Tamil Studies.)
- Keeladi - 'Sangam City Civilization on the banks of river Vaigai' (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)
- Studies in the History of India with Special Reference to Tamil Nadu (Dr.K.K.Pillay) (Published by: The Author)

**Reference**

- Porunai Civilization (Jointly Published by: Department of Archaeology & Tamil Nadu Text Book and Educational Services Corporation, Tamil Nadu)
- Journey of Civilization Indus to Vaigai (R.Balakrishnan) (Published by: RMRL) – Reference Book.

| MA231120 | Basic Mathematics | L | T | P | C |
|---|---|---|---|---|---|
| Theory | | 3 | 1 | 0 | 4 |

## Introduction

Mathematics develops analytical reasoning and critical thinking. It is an integral part of core engineering subjects. It helps to perform calculations and is used to create, test and analyze engineering models. The knowledge of Mathematics is compulsory for a better understanding of engineering and science subjects. This course is designed to give comprehensive coverage at an introductory level to Matrices, Determinants, Trigonometry, Vector Algebra, Statistical Measures and Probability.

## Course Objectives

The objective of this course is to enable the students to

- acquire knowledge in basics of matrices and determinants.
- explain the trigonometric processes involved in engineering applications.
- define the essential elements to denote vectors in engineering applications.
- summarize the methods of collecting, analyzing, interpreting and presenting empirical data.
- explain the principal concepts about probability.

## Course Outcomes

After successful completion of this course, the students should be able to

CO1: solve simultaneous linear equations using determinants and find the inverse of non-singular matrices.
CO2: compute the values of trigonometric ratios of compound angles and double angles.
CO3: solve problems involving the operations on vectors.
CO4: calculate the mean, variance and standard deviation of data distributions.
CO5: calculate the probability of simple and compound events.

## Pre-requisites

High School Mathematics

| MA231120 | Basic Mathematics | L | T | P | C |
|---|---|---|---|---|---|
| Theory | | 3 | 1 | 0 | 4 |

CO/PO Mapping

| CO / PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 |
|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | 2 | 2 | 1 | 2 | 3 |
| CO2 | 3 | 3 | 2 | 2 | 1 | 1 | 3 |
| CO3 | 3 | 3 | 2 | 2 | 1 | 1 | 3 |
| CO4 | 3 | 3 | 2 | 2 | 1 | 2 | 3 |
| CO5 | 3 | 3 | 2 | 2 | 1 | 1 | 3 |

*Legend: 3-High Correlation, 2-Medium Correlation, 1-Low Correlation*

Instructional Strategy

- It is advised that teachers take steps to pique pupils' attention and boost their learning confidence.
- To help students learn and appreciate numerous concepts and principles in each area, teachers should provide examples from daily life, realistic situations and real-world engineering and technological applications.
- The demonstration can make the subject exciting and foster in the students a scientific mindset. Student activities should be planned on all the topics.
- Throughout the course, a theory-demonstrate-practice-activity strategy may be used to ensure that learning is outcome-based and employability-based.
- All demonstrations/Hand-on practices are under a simulated environment (may be followed by a real environment as far as possible).

| MA231120 | Basic Mathematics | L | T | P | C |
|---|---|---|---|---|---|
| Theory | | 3 | 1 | 0 | 4 |

Assessment Methodology

| | Continuous Assessment (40 marks) | | | | End Semester Examination (60 marks) |
|---|---|---|---|---|---|
| | CA1 | CA2 | CA3 | CA4 | |
| Mode | Written Test | Written Test | Written Test | Quiz/MCQ/ Activity/ Assignment | Written Examination |
| Duration | 2 hours | | | | 3 hours |
| Exam Marks | 30 | 30 | 30 | 10 | 100 |
| Converted to | 15 | 15 | 15 | 10 | 60 |
| Marks | Best Two of CA1, CA2 & CA3 (30 marks) | | | 10 | 60 |

| MA231120 | Basic Mathematics | L | T | P | C |
|---|---|---|---|---|---|
| Theory | | 3 | 1 | 0 | 4 |

| Unit I | MATRICES AND DETERMINANTS | |
|---|---|---|
| | Matrices – Types of matrices – Equality, addition, subtraction, scalar multiplication and multiplication of matrices – Transpose of a matrix – Determinants – Values of second and third order determinants – Solution of simultaneous linear equations using Cramer's rule for 2 and 3 unknowns – Singular and non-singular matrices – Minor and cofactor – Cofactor matrix – Adjoint matrix – Inverse of a matrix – Simple problems – Engineering applications (not for examinations). | 9+3 |
| **Unit II** | **TRIGONOMETRY** | |
| | Degree and Radian – Relation between degree and radian – Trigonometric ratios – Trigonometric ratios of standard angles – Graphs of $\sin x, \cos x, \tan x$ and $e^x$ – Compound angle identities – $\sin(A \pm B), \cos(A \pm B)$ and $\tan(A \pm B)$ (without proof) – Double angle identities – $\sin 2A, \cos 2A$ and $\tan 2A$ (without proof) – Simple problems – Engineering applications (not for examinations). | 9+3 |
| **Unit III** | **VECTOR ALGEBRA** | |
| | Definition, notation and rectangular resolution of a vector – Position vector – Addition and subtraction of vectors – Magnitude of a vector – Unit vector – Direction ratios – Direction cosines – Scalar product and vector product of two vectors – Projection – Angle between two vectors – Unit vector perpendicular to two vectors – Area of triangles and parallelograms using vector product – Simple problems – Engineering applications (not for examinations). | 9+3 |
| **Unit IV** | **STATISTICS** | |
| | Statistical data – Ungrouped data – Grouped data – Discrete data – Continuous data – Arithmetic mean – Variance – Standard deviation – Fitting a straight line using the method of least squares – Simple problems – Engineering applications (not for examinations). | 9+3 |
| **Unit V** | **PROBABILITY** | |
| | Random experiment – Outcomes – Sample space – Events – Occurrence of events – 'not', 'and' and 'or' events – Exhaustive events – Mutually exclusive events – Classical definition of probability – Axioms of probability – Probability of an event – Probability of 'not', 'and' and 'or' events – Conditional probability – Multiplication rule – Independent events – Simple problems (Combinatorial problems excluded) – Engineering applications (not for examinations). | 9+3 |
| | **TOTAL HOURS** | **60** |

| MA231120 | Basic Mathematics | L | T | P | C |
|---|---|---|---|---|---|
| Theory | | 3 | 1 | 0 | 4 |

## Suggested List of Students Activities

Other than classroom learning, the following are the suggested student related co-curricular activities which can be undertaken to accelerate the attainment of the various outcomes in this course.

- Find the area of scalene-triangle shaped objects: Choose a scalene-triangle shaped plane object. Make a grid to cover the entire object by drawing one-unit equally spaced horizontal and vertical lines. Choose $x$-axis and $y$-axis on the grid and determine the coordinates of the vertices of the triangle. Let $A(x_1, y_1), B(x_2, y_2)$ and $C(x_3, y_3)$ be the vertices. Calculate the area of the object using the formula

$$\frac{1}{2}\begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix}$$

- Find the height of a building: Choose a building in the college campus. Mark a point on the ground and measure the shortest distance from the point to the building. Let the distance be $d$ metres. Measure the angle of elevation of the top of the building just above the foot of the perpendicular drawn from the point to the building using a clinometer. Let the angle of elevation be $\theta$. Calculate the height of the building using the formula $h = d\tan\theta$. Compare the result with original height of the building. Use the same technique to calculate the size of the moon or distance of the moon (necessary inputs to be given).

- Predict the amount of electrical power a solar panel can produce: Using appropriate surveying apparatus, find the position-vector representation of the four corners of a solar panel fixed on a roof-top. Let the vectors arranged in counter clockwise direction be $\overrightarrow{OP_1} = x_1\vec{\imath} + y_1\vec{\jmath} + z_1\vec{k}, \overrightarrow{OP_2} = x_2\vec{\imath} + y_2\vec{\jmath} + z_2\vec{k}, \overrightarrow{OP_3} = x_3\vec{\imath} + y_3\vec{\jmath} + z_3\vec{k}$ and $\overrightarrow{OP_4} = x_4\vec{\imath} + y_4\vec{\jmath} + z_4\vec{k}$. Find the normal vector $\vec{N}$ to the surface $P_1P_2P_3P_4$ using the vector product formula $\vec{N} = \overrightarrow{P_1P_2} \times \overrightarrow{P_1P_4}$. Measure the direction of the sun and determine the unit vector representation of the direction of the sun as $\hat{a} = a_1\vec{\imath} + a_2\vec{\jmath} + a_3\vec{k}$. Let the intensity of the sunlight be $I\ Watts/m^2$. Give a vector representation to it by $\vec{F} = I\hat{a}$. The scalar product $\vec{F}.\vec{N}$ estimates the amount of energy absorbed and converted on the solar panel. Verify the results with actual electrical power generated by the solar panel.

- Why solar panels are usually tilted? Use the knowledge of trigonometry and vectors to reason and understand whether solar panels should be tilted or not.

- Fit a straight line for height-weight chart: Suppose there are 60 students in the class. Choose 5 students randomly to form group B and form group A with the remaining 55 students. Measure the height and weight of $i^{th}$ student in group A and denote them as $x_i$ and $y_i$ respectively. Create a bivariate data table consisting heights and weights of all the students in group A as follows.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Height $X$ (in cm) | $x_1$ | $x_2$ | $x_3$ | $x_4$ | ... | $x_{54}$ | $x_{55}$ |
| Weight $Y$ (in Kg) | $y_1$ | $y_2$ | $y_3$ | $y_4$ | ... | $y_{54}$ | $y_{55}$ |

Fit a straight line of the form $y = mx + c$ using the method of least squares by taking height as independent variable and weight as dependent variable. Calculate the weights of the students in group B by inserting the heights in the formula $y = mx + c$ and compare them with their original weights.

- Monty Hall problem: For creating thought-provoking excitement in probability, students can be engaged in the famous Monty Hall problem. The problem is named after Monty Hall, a television game show host. A room is equipped with three doors. There is a car behind one of the doors, but there are goats behind the other two doors. The contestant can choose one door. The host will open one of the other two doors to reveal a goat. Then, the host will give two choices to the contestant. The contestant can stick to the original choice or switch to the other unopened door. If the contestant sticks to the original choice, the probability of winning the car is 1/3. If the contestant switches the selection to the other door, the probability of winning the car is 2/3.

## References


- Higher Secondary First Year Mathematics Volume-I & Volume-II, Tamil Nadu Textbook and Educational Services Corporation, Government of Tamil Nadu, 2022.
- Higher Secondary Second Year Mathematics Volume-I & Volume-II, Tamil Nadu Textbook and Educational Services Corporation, Government of Tamil Nadu, 2022.
- John Bird, Higher Engineering Mathematics, Routledge, 9th Edition, 2021.
- Grewal, B.S., Higher Engineering Mathematics, Khanna Publishers, 42nd Edition, 2012.
- Deepak Singh, Mathematics-I, Khanna Book Publishing Co. (P) Ltd., 2021.
- Garima Singh, Mathematics-II, Khanna Book Publishing Co. (P) Ltd., 2021.


## Web-based/Online Resources

https://www.khanacademy.org/math/
https://www.mathportal.org/
https://openstax.org/subjects/math
https://www.mathhelp.com/
https://www.geogebra.org/
https://www.desmos.com/
https://phet.colorado.edu/

| PH231330 | Basic Physics | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 2 | 0 | 2 | 3 |

## Introduction

Any technological innovation happens through a firm understanding of basic science. Knowing and developing proper understanding of the scientific principles behind every technological gadget or instrument is inevitable to a polytechnic student. This course systematically introduces the laws of physics which gives correct perspectives of dealing with technology and its societal uses.

## Course Objectives

The objective of this course is to enable the student to

1. Outline the definitions of physical quantities, units, dimensions and error analysis
2. Explain the basics of vectors, forces and its vectorial properties
3. State Newton's laws and its application into day-to-day life and covers basics of periodic motion
4. Describe the elastic properties of any solid material
5. Explain the heat, work, modes of heat transfer, laws of thermodynamics

## Course Outcomes

On successful completion of this course, the student will be able to

CO1: Apply the knowledge of measuring tools used in the Engineering fields
CO2: Demonstrate the applications of Lami's theorem and principle of moment into real world problems
CO3: Correlate the Newton's laws into to day-to-day applications and measure the value of g
CO4: Illustrate the elastic properties of material for engineering applications
CO5: Relate the heat and laws of thermodynamics in technological fields

## Pre-requisites

High School Science

| PH231330 | Basic Physics | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 2 | 0 | 2 | 3 |

CO/PO Mapping

| CO / PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 |
|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | | | | 1 | 1 |
| CO2 | 3 | 3 | | | | 1 | 1 |
| CO3 | 3 | 3 | | | | 1 | 1 |
| CO4 | 3 | 3 | | | | 1 | 1 |
| CO5 | 3 | 3 | | | | 1 | 1 |

*Legend: 3-High Correlation, 2-Medium Correlation, 1-Low Correlation*

Instructional Strategy

- It is advised that teachers take steps to pique pupils' attention and boost their learning confidence.
- To help students learn and appreciate numerous concepts and principles in each area, teachers should provide examples from daily life, realistic situations, and real-world engineering and technological applications. Try to give source examples from where the students would be familiar - like sports, or an activity that they usually engage in frequently.
- The demonstration can make the subject exciting and foster in the students a scientific mindset. Student activities should be planned on all the topics.
- Throughout the course, a theory-demonstrate-practice-activity strategy may be used to ensure that learning is outcome- and employability-based.
- All demonstrations/Hand-on practices are under a simulated environment (may be followed by a real environment as far as possible).
- Do not let students work on an activity or an experiment with the expected outcome, rather allow students to be honest about whatever the results of the experiment are. If the results are different from the expectations, students should do an analysis where could be the source of error, if any.

| PH231330 | Basic Physics | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 2 | 0 | 2 | 3 |

Assessment Methodology

| | Continuous Assessment (40 marks) | | | | End Semester Examination (60 marks) |
|---|---|---|---|---|---|
| | CA1 | CA2 | CA3 | CA4 | |
| Mode | Written Test | Lab Assessment | Written Test | Lab Assessment | Written Examination |
| Duration | 2 hours | | | | 3 hours |
| Exam Marks | 30 | 20 | 30 | 20 | 100 |
| Converted to | 10 | 10 | 10 | 10 | 60 |
| Marks | 20 | | 20 | | 60 |

| PH231330 | Basic Physics | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 2 | 0 | 2 | 3 |

| Unit I | UNITS AND MEASUREMENTS | |
|---|---|---|
| Introduction – Science & Technology –Units and dimensions – definition – fundamental quantities – definition and their SI units, symbols – Derived physical quantities – Dimensional formula for length, mass and time, SI unit multiples and submultiples and prefixes of units.<br><br>Measurements: Need & limitations of measuring instruments, least count, types of measurement, – screw gauge – Vernier calliper- Applications into industries. Errors in measurement (systematic and random), absolute error, relative error, error propagation (no derivation) –precautions to avoid systematic and random errors- Engineering applications.<br><br>Physical quantities: velocity, momentum, acceleration, force, impulse, work, energy and power, Horsepower, watt, Calorie and Joule – Conversions. | | 7 |
| Ex. 1 SCREW GAUGE: Using Screw Gauge: (i) Find the thickness and volume of given gauge wires (5,6,7,8,9) by measuring its length and diameter and error estimation (ii) Find the volume of the glass plate by measuring its thickness and area | | 4 |
| Ex. 2 VERNIER CALIPER: Using Vernier Caliper: (i) Find the volume of a given hollow and solid cylinder by measuring its length and diameter (ii) Find the volume of a given rectangular block by measuring its length, breadth and thickness and error estimation | | 4 |
| **Unit II** | **STATICS** | |
| Scalar and vector quantities: Definition and examples – Resolution of vector into two perpendicular components – Concurrent forces & coplanar forces: Examples – Resultant and Equilibrant force – Triangle and Parallelogram law for two forces: Statement only (no derivation), Examples – Lami's theorem – statement and explanation – Experimental verification of parallelogram of forces and Lami's theorem – Engineering applications - Moment of force, Couple – Principle of moment – Determination of mass of the given body | | 6 |
| Ex. 3 VERIFICATION OF LAMI'S THEOREM: Verification of parallelogram and Lami's theorem for concurrent forces | | 4 |
| Ex. 4 PRINCIPLE OF MOMENT: Using the principle of moment, determine the unknown mass of the given object | | 2 |
| **Unit III** | **DYNAMICS** | |
| Newton laws, kinematic equations – Examples (horizontal, freely falling, vertically thrown) – Projectile motion (qualitative discussion) – Circular motion – angular velocity – period – frequency – relation between linear and angular velocity – centripetal and centrifugal force: application of centripetal and centrifugal forces (working of a centrifuge device) - Simple harmonic motion – amplitude – frequency – period – Simple pendulum – Acceleration due to gravity | | 6 |

| PH231330 | Basic Physics | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 2 | 0 | 2 | 3 |
| Ex. 5 SIMPLE PENDULUM: Determination of acceleration due to gravity using simple pendulum | | | | | 4 |
| Unit IV | ELASTIC PROPERTIES OF SOLIDS | | | | |
| Elastic and plastic bodies – stress–strain – definitions – Hooke's law – three types of strain – stress-strain curve - elastic and plastic limit – Three modulus of elasticity and its relations (no derivation)- Uniform and non-uniform bending of beams – Experimental determination of Y by uniform bending – Poisson ratio – Engineering applications of elasticity | | | | | 5 |
| Ex. 6 YOUNG'S MODULUS: Determination of young's modulus of a given object (one-meter wood scale) using pin and microscope | | | | | 4 |
| Ex. 7 HELICAL SPRING: Verification of Hooke's law and determination of Spring constant of helical spring | | | | | 4 |
| Unit V | HEAT | | | | |
| Concept of heat – temperature – centigrade, Fahrenheit and Kelvin scales – conduction, convection –radiation – Good and bad thermal conductors – Properties of thermal radiation – Heat conversion – Specific heat capacity – Laws of thermodynamics – different types of process – Examples – Ideal gas – Boyle's law. | | | | | 6 |
| Ex. 8 BOYLE'S LAW: Verification of Boyle's law using Quill Tube | | | | | 4 |
| TOTAL HOURS | | | | | 60 |

Suggested List of Students Activity (Ungraded)

- Presentation/Seminars by students on any recent technological developments based on fundamental physics
- Periodic class quizzes conducted on a weekly/fortnightly basis to reinforce the basic physic concepts
- Micro project that shall be an extension of any practical lab exercise to real-world application
- Connecting sports to physics concepts:
    - Basketball or football with vectors - projectile motion (horizontal and vertical component). Intuitive understanding of the vectors. Students try out different angles of shooting the ball. For example, asking students through different combinations what angle of throw gives the farthest range, then later compare their answer with a mathematical equation.
- Factors affecting pendulum parameters - does length or mass affect the time period of the pendulum? Does the value of g depend on the setup of the pendulum?
- For STATICS unit - understanding forces involved in the game of human pyramid - can do a demonstration or an activity where cards or paper cups can be used for constructing a pyramid and understand how each cup is in equilibrium despite many forces acting on them.

| PH231330 | Basic Physics | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 2 | 0 | 2 | 3 |

**Reference**


- XIth standard Tamilnadu State Board Physics Text Book, 2023 edition, Textbook Corporation Tamilnadu
- H.C.Verma, Concepts of Physics Vol 1 & Vol 2, Bharathi Bhavan Publishers, 1st edition, 2021


**Web-based/Online Resources**

https://www.youtube.com/@Ch22PhysicsIITPAL
https://www.youtube.com/playlist?list=PLyQSN7X0ro203puVhQsmCj9qhlFQ-As8e
https://youtube.com/playlist?list=PLFE3074A4CB751B2

| CH231340 | Basic Chemistry | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 2 | 0 | 2 | 3 |

## Introduction

Engineering is the application of the principles of basic science. The present syllabi of Basic Chemistry compiled for Diploma Engineering students restricts itself to certain limits, where it concentrates on basic concepts and useful applications viz. solution chemistry, surface chemistry, engineering polymeric materials like plastics, rubbers and electrochemistry, types of battery, preventions of corrosion. Enriching social awareness is an important component of education, hence, environmental chemistry aspects like air pollution, solid waste management and green chemistry are also included.

## Course Objectives

The objective of this course is to enable the student to

1. Outline the importance of acids, base pH Indicators with industrial applications.
2. Illustrate the adsorption properties of colloidal particles, catalyst and their application.
3. Examine the engineering polymeric materials like rubber & plastics.
4. Explain about electrochemistry, electrochemical cells, batteries and to know about corrosion and prevention.
5. Appreciate the importance of Environmental Chemistry.

## Course Outcomes

After successful completion of this course, the students should be able to

CO1: Enumerate the concentration, strength & pH of acids & base.
CO2: Demonstrate the catalytic & colloidal principles & properties
CO3: Elucidate the composite & usage of plastics and polymer products
CO4: Articulate the principles in electroplating, batteries and corrosion.
CO5: Interpret the effect of environmental hazards and the need of Green Chemistry.

## Pre-requisites

High School Science

| CH231340 | Basic Chemistry | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 2 | 0 | 2 | 3 |

## CO/PO Mapping

| CO / PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 |
|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | 2 | | 2 | 1 | 1 |
| CO2 | 3 | 3 | 2 | | 2 | 1 | 1 |
| CO3 | 3 | 3 | 2 | | 2 | 1 | 1 |
| CO4 | 3 | 3 | 3 | | 2 | 1 | 1 |
| CO5 | 3 | 3 | 3 | | 2 | 1 | 1 |

*Legend: 3-High Correlation, 2-Medium Correlation, 1-Low Correlation*

## Instructional Strategy

- It is advised that teachers take steps to pique pupils' attention and boost their learning confidence.
- To help students learn and appreciate numerous concepts and principles in each area, teachers should provide examples from daily life, realistic situations, and real-world engineering and technological applications.
- The demonstration can make the subject exciting and foster in the students a scientific mindset. Student activities should be planned on all the topics.
- Throughout the course, a theory-demonstrate-practice-activity strategy may be used to ensure that learning is outcome- and employability-based.
- All demonstrations/Hand-on practices are under a simulated environment (may be followed by a real environment as far as possible).

## Assessment Methodology

| | Continuous Assessment (40 marks) | | | | End Semester Examination (60 marks) |
|---|---|---|---|---|---|
| | CA1 | CA2 | CA3 | CA4 | |
| Mode | Written Test | Lab Assessment | Written Test | Lab Assessment | Written Examination |
| Duration | 2 hours | | | | 3 hours |
| Exam Marks | 30 | 20 | 30 | 20 | 100 |
| Converted to | 10 | 10 | 10 | 10 | 60 |
| Marks | 20 | | 20 | | 60 |

| CH231340 | Basic Chemistry | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 2 | 0 | 2 | 3 |

| Unit I | SOLUTION CHEMISTRY | |
|---|---|---|
| Solution –Solute, Solvent - dilute and concentrated solution – methods of expressing the concentration of the solution – molality – molarity – normality(simple numerical problems only). Properties of acids and bases -Lewis concept of acids and bases –advantages - pH and pOH – Definition – Indicator – Definition – Buffer solution – Definition – Types of buffer solution with examples – Application of pH in industries. | | 6 |
| Ex 1. Estimation of sulphuric acid<br>Ex 2. Estimation of strong acid by pH metry | | 6 |
| **Unit II** | **SURFACE CHEMISTRY** | |
| Colloids – Definition – True solution and Colloidal solution – Differences – lyophilic colloids and lyophobic colloids (definitions only) – Properties - Tyndall effect – Brownian movement – Industrial applications of colloids. Smoke Precipitation by Cottrell's method, Purification of water, Catalyst – Definition – Positive – Negative catalyst – Definition – Types of catalysis – Homogeneous and Heterogeneous catalysis examples– Characteristics of a catalyst – Industrial applications of catalysts. | | 6 |
| Ex 3. Preparation of lyophilic colloids and lyophobic colloids | | 6 |
| **Unit III** | **POLYMER CHEMSITRY** | |
| Plastics – types – Types of Polymerization-Addition and condensation polymerization Thermoplastics and Thermoset plastics – Differences – Mechanical properties of plastics – Advantages of plastics over traditional materials-Natural polymer – Rubber – Extraction of rubber from latex - defects of natural rubber – Vulcanization – Compounding of rubber –Ingredients and their functions. | | 6 |
| Ex 4. Preparation of thermosetting resin-Urea-formaldehyde resins | | 6 |
| **Unit IV** | **ELECTRO CHEMISTRY** | |
| Electronic concept of oxidation and reduction– electrolytes -classification-strong, weak and non-electrolyte – examples – electrolysis – definition – Mechanism – Industrial applications of Electrolysis - Chrome plating - Primary Battery – Secondary Battery – Definition, examples & construction of Li-ion Battery. Corrosion (Definition)– Differential aeration theory only – Factors Influencing Rate of Corrosion. – Methods of Prevention of Corrosion (qualitative). | | 6 |
| Ex. 5. Estimation of Mohr's salt by permanganometry<br>Ex. 6. Comparison of strength of two $KMnO_4$ solutions | | 6 |

| CH231340 | Basic Chemistry | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 2 | 0 | 2 | 3 |

| Unit V | ENVIRONMENTAL CHEMISTRY | |
|---|---|---|
| | Air pollution – Definition – Air pollutants (SO2, H2S, HF, CO and Dust) – Sources and Harmful effects – Formation of Acid Rain – Harmful effects – Green House Effect – Causes – Ozone layer depletion and its harmful effects- Global warming – Harmful effects – Control of Air Pollution. Solid Waste – Definition – Problems – Types of Solid waste methods of Disposal – Land fill and Incineration – Recycling – Definition – Examples – Advantages of Recycling (Basic ideas) Green Chemistry Definition – Goals of Green Chemistry. | 6 |
| | Ex 7. Crystallization of copper sulphate and identification of ions<br>Ex 8. Decolorization of clayey water using sand bed. | 6 |
| | TOTAL HOURS | 60 |

**Suggested List of Students Activity**

- Mini Projects like working model of experiments like chrome plating, tinning and sand bed
- Better understanding through work sheets / Quiz/Oral Testing
- Crossword puzzles and poster making

**Reference**


- Textbook on Chemistry for XI standard (TN State Board)
- Textbook on Chemistry for XII standard (TN State Board)
- Essentials of Physical Chemistry, Bahl & Tuli, 28th edition, S.Chand Publishing House.
- A textbook of Engineering Chemistry, Dr.Sunita Rattan, 2020 reprint, S.K.Kataria&Sons
- Textbook of Physical Chemistry, P.L Soni,O.P.Dharmarha & U.N.Dash,2022 edition, S.Chand Publishing House.


**Web-based / Online Resources**

https://libguides.lib.msu.edu/chemistry/teachonline
https://www.khanacademy.org/science/chemistry
https://phet.colorado.edu/
https://www.sciencebysimulation.com/chemreax/Faq.aspx

| EN231350 | Communicative English I | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 1 | 0 | 2 | 2 |

## Introduction

Language is a means of self-expression and one of the prime tools of communication. Communicative fluency augments one's personal, academic, social and professional life. The present syllabus focuses on four Communication Skills, viz. Listening, Speaking, Reading and Writing and enables the students at the Diploma level to gain confidence and fluency in communication which in turn would enhance them to face their career commitments with globalized standards.

## Course Objectives

The objective of this course is to enable the student to

1. Use English confidently for practical purposes across the curriculum.
2. Express ideas in clear and grammatically correct usage
3. Plan, organize and present ideas coherently using cohesive devices.
4. Analyze, interpret, infer and evaluate ideas and respond appropriately.
5. Enable learners to communicate effectively and appropriately in real-life situations.

## Course Outcomes

After successful completion of this course, the students should be able to

CO 1: Apply spoken English in various contexts, including conversations, lectures, and audio recordings.
CO 2: Demonstrate fluently and accurately in spoken English, using appropriate vocabulary & grammar, and engage in conversations, discussions, and presentations.
CO 3: Communicate effectively in English, demonstrating coherence, organization, and clarity in their spoken / written communication.
CO 4: Develop critical thinking skills by analyzing and evaluating the information presented in English, expressing opinions, and supporting arguments in a logical and coherent manner.
CO 5: Practice the language learning process, identify areas for improvement, and seek opportunities for further language development outside the classroom.

| EN231350 | Communicative English I | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 1 | 0 | 2 | 2 |

CO/PO Mapping

| CO / PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 |
|---|---|---|---|---|---|---|---|
| CO1 | | | | | | 3 | 2 |
| CO2 | | | | | | 3 | 2 |
| CO3 | | | | | | 3 | 2 |
| CO4 | | | | | | 3 | 2 |
| CO5 | | | | | | 3 | 2 |

*Legend: 3-High Correlation, 2-Medium Correlation, 1-Low Correlation*

Instructional Strategy

The instructional strategy for Communicative English classes employs a learner-centred and communicative approach that focuses on active student participation and engagement. Here are some key strategies to be followed:

- Communicative Activities: Design and facilitate activities that encourage students to actively use the language in meaningful and authentic contexts. This can include role plays, language games, discussions, debates, group projects, and problem-solving tasks.
- Pair and Group Work: Incorporate pair and group work opportunities to promote student interaction and collaboration. This allows them to practice and reinforce their language skills through communication with their peers.
- Authentic Materials: Utilize authentic materials such as news articles, videos, podcasts, and real-life texts to expose students to genuine language use and cultural contexts. This helps develop their comprehension and critical thinking skills while expanding their vocabulary and cultural awareness.
- Task-Based Learning: Implement task-based learning activities where students work on specific tasks or projects that require them to use English for a real-world purpose. This approach fosters language acquisition through meaningful communication and problem-solving.
- Language Input and Output Balance: Ensure a balance between language input (exposure to new vocabulary, grammar structures, and examples) and language output (opportunities for students to produce language). This balance allows students to build both receptive (Listening & Reading) and productive language skills (Speaking & Writing)

- Use of Technology: Incorporate technology tools and resources, such as language learning apps, online platforms, interactive multimedia, and virtual communication tools, to enhance engagement and provide additional language practice opportunities.
- Multimodal Approaches: Engage students through a variety of modalities, including listening, speaking, reading, and writing, as well as incorporating visual aids, gestures, and real-life examples. This caters to different learning styles and reinforces language learning through multiple channels.
- Regular Assessment and Reflection: Incorporate formative and summative assessments to gauge student progress and provide targeted feedback. Encourage students to reflect on their language learning journey, set goals, and actively monitor their own progress.

## Assessment Methodology

| | Continuous Assessment (40 marks) | | | | End Semester Examination (60 marks) | |
|---|---|---|---|---|---|---|
| | CA1 | CA2 | CA3 | CA4 | | |
| Mode | Written Test | Written Test | Lab Test | Quiz/MCQ/ Activity/ Assignment | Written Exam | Practical Exam |
| Duration | 2 hours | | | 1 Hour | 1½ hours | 1½ hours |
| Exam Marks | 30 | 30 | 30 | 10 | 50 | 50 |
| Converted to | 15 | 15 | 15 | 10 | 60 | |
| Marks | Best of CA1 & CA2 15 marks | | 15 | 10 | 60 | |

| EN231350 | Communicative English I | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 1 | 0 | 2 | 2 |

| Unit I | EXPRESSIVE ENGLISH | |
|---|---|---|
| THEORY: 'Night of the Scorpion' by Nizim Ezekiel<br><br>FOCUS ON: Differentiating Open Class Words - (Noun, Verb, Adjective, Adverb) (Based on the poem) | | 3 |
| PRACTICAL: (Lab / Activity)<br><br>LISTENING: Simple and short poems on NATURE (Selected poems will be given) Identification: Nouns, Adjectives, Rhyming Words<br><br>Ex. 1 Listening to poems on NATURE and Identifying Nouns, Adjectives and Rhyming Words<br><br>A Short poem on Nature of 8 – 10 to be given. Students will be asked to listen to the audio played / poem read and identifies the nouns, adjectives and rhyming words used in the poem. Listening practice is to be given.<br>(To Be Recorded in the Record Note Book)<br><br>SPEAKING: Word Game (Essential words to be given) (Nouns, Verbs, Adjectives, Adverbs) Oral practice is to be given.<br><br>READING: Tongue Twisters (Selected 20 sentences will be given) Oral practice is to be given.<br><br>WRITING: Academic Letters (Model Letters to be given) Written practice is to be given. | | 6 |
| **Unit II** | **CREATIVE ENGLISH** | |
| THEORY: 'The River' by A.K.Ramanujam<br><br>FOCUS ON: Usage of Main Verb / Auxiliary Verb/ Modal Verb and Tenses | | 3 |
| PRACTICAL: (Lab / Activity)<br><br>LISTENING: General simple/short poems on MOTIVATION / SOFT SKILLS (Selected poems will be given). Fill ups: a) Information Gaps, b) Main Verbs/Modal Verbs. Listening practice is to be given.<br><br>SPEAKING: Useful Expressions (Greetings, Requesting. Asking / Eliciting information, Offering Suggestions / Opinions)<br><br>Ex. 2 Speaking - Useful Expressions - Students will be asked to give suitable expressions according to the context given. Speaking practice is given<br>(To Be Recorded in the Record Note Book)<br><br>READING: Comic Strips, Small Conversations. Oral practice is to be given. | | 6 |

| EN231350 | Communicative English I | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 1 | 0 | 2 | 2 |

| | |
|---|---|
| WRITING: Sentence Making using Substitution Table (Based on Tenses)<br><br>Writing practice is given. | |
| **Unit III** | **EFFECTIVE ENGLISH** |
| THEORY: PROSE COMBINED WITH LSRW SKILLS<br><br>FOCUS ON: Linkers & Connectives | 3 |
| PRACTICAL: (Lab / Activity)<br><br>LISTENING: Short Story on Moral Value (Identifying Linkers). Listening practice is to be given.<br><br>SPEAKING: Just a Minute Talk (JAM) (Selected Topics can be given). Speaking practice is to be given<br><br>READING: General Paragraph on Moral Values (Selected passages given)<br><br>Ex. 3 Reading General Paragraph on Moral Values. Students will be asked to read the given passage on Moral Values with proper Stress and Intonation. Reading practice is to be given.<br>(To Be Recorded in the Record Note Book)<br><br>WRITING: Note Taking/Summarization (Based on the General Paragraph given). Written practice is to be given. | 6 |
| **Unit IV** | **SITUATIONAL ENGLISH** |
| THEORY: PROSE COMBINED WITH LSRW SKILLS<br><br>FOCUS ON: Spotting the Errors in the given sentences | 3 |
| PRACTICAL: (Lab / Activity)<br><br>LISTENING: General Conversations. Framing Sentences (Based on the words used in the conversation). Listening practice is to be given.<br><br>SPEAKING: Introducing Oneself / Others.<br><br>Ex. Speaking - Introducing Oneself / Others. Students will be asked to Introduce himself/herself and their family members/friends. Speaking practice is to be given.<br>(To Be Recorded in the Record Note Book)<br><br>READING: Reading General Paragraphs and identifying main points (Skimmimg). Reading practice is to be given.<br><br>WRITING: General Paragraph Writing (5 lines) (Hints to be given). Writing practice is to be given. | 6 |

| EN231350 | Communicative English I | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 1 | 0 | 2 | 2 |

| Unit V | FUNCTIONAL ENGLISH | |
|---|---|---|
| THEORY: PROSE COMBINED WITH LSRW SKILLS<br><br>FOCUS ON: Passive Voice | | 3 |
| PRACTICAL: (Lab / Activity)<br><br>LISTENING: General passages related to technology (Comprehension Questions). Listening practice is to be given.<br><br>SPEAKING: Product description (Model exercises based on their respective branches to be given). Speaking practice is to be given.<br><br>READING: Reading technical passages and identifying specific points (Scanning) (Model passages for reading are given). Reading practice is to be given.<br><br>WRITING: Paragraph Writing (6 - 8 lines) Writing with a suitable Topic Sentence, Explanatory Sentences, Examples and using Link words (TEEL Model)<br><br>Ex. 5 Writing paragraph using TEEL model. Students will be asked to write a paragraph using the TEEL model of giving the Topic Sentence, Explanatory Sentences, Examples and using Link words. Writing practice is to be given.<br>(To Be Recorded in the Record Note Book) | | 6 |
| TOTAL HOURS | | 45 |

**Suggested List of Students Activity**

- Role Plays: Assign students different roles or scenarios and have them engage in conversations or situations to practice speaking and listening skills.
- Information Gap Activities: Create activities where students need to exchange information with each other to complete a task or solve a problem. This encourages communication and collaboration.
- Descriptive Presentations: Ask students to give presentations about a specific topic, describing it in detail and using appropriate vocabulary and language structures.
- Language Games: Incorporate language learning games like word puzzles, vocabulary quizzes, charades, or language board games to make learning enjoyable and interactive.
- Problem-Solving Tasks: Provide real-life or hypothetical problems that students must solve through discussion and collaboration. This encourages critical thinking and effective communication.
- News Discussions: Bring in current news articles or videos for students to discuss and express their opinions on various topics.
- Collaborative Writing: Assign group writing tasks where students collaborate to create a story, report, or presentation. This promotes teamwork and helps improve writing skills.

- Simulations: Create simulated scenarios or real-life situations where students must use English to navigate and interact, such as ordering food in a restaurant or booking a hotel room.

## Text Books

- "Cambridge English Skills: Real Listening and Speaking" by Miles Craven
- "Writing Better English for ESL Learners" by Ed Swick
- "English Grammar in Use" by Raymond Murphy

## Reference

- "Practical English Usage" by Michael Swan
- "Oxford Basics – Simple Reading Activities" by Jill Hadfield, Charles Hadfield
- "Oxford Basics – Simple Speaking Activities" by Jill Hadfield, Charles Hadfield

## Web-based / Online Resources

https://www.bbc.co.uk/learningenglish/
https://www.fluentu.com/
https://www.englishclub.com/

| WP231360 | Basic Workshop Practices | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 1 | 0 | 2 | 2 |

## Introduction

Basic Workshop Practices help to develop the technical hands-on skills required by the technicians working in various Engineering sectors. This course intends to impart the basics of hand tools and their uses in different sections of manufacturing. The topics covered are based on the syllabus for diploma studies in Engineering. The course is planned to include basic practical experience in Fitting, Wiring and Plumbing. The courses are arranged in sequence, that starts from the basic concepts on safety rules followed in Industries, Dimensioning system, Basic Measuring instruments & basic tools used for Manufacturing processes. In this course, it is expected that the students would be able to get workshop experience, which helps to build an understanding of the complexity of the industrial job and the skills requirement of the jobs.

## Course Objectives

The objective of this course is to enable the student to

1. Understand the importance of safety & Precautions in Industries.
2. Understand and practice the 5S system in Industries.
3. Identify suitable marking and measuring tools for materials.
4. Read the drawing and understand the dimensioning system.
5. Practical skills on Fitting, Plumbing & Wiring trades.

## Course Outcomes

After successful completion of this course, the students should be able to

CO1: Illustrate the safety aspects and 5s system in Industry.
CO2: Identify & select the appropriate tools required for specific operations.
CO3: Prepare the jobs according to the drawing for Fitting, Plumbing and Wiring.
CO4: Produce jobs as per specified dimensions and inspect the job for quality
CO5: Demonstrate the Fitting, Wiring and plumbing practices for house wiring practice, install and test a battery with hydrometer.

## Pre-requisites

Nil

| WP231360 | Basic Workshop Practices | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 1 | 0 | 2 | 2 |

CO/PO Mapping

| CO / PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 |
|---|---|---|---|---|---|---|---|
| CO1 | 3 | 1 | 2 | 3 | 2 | | 1 |
| CO2 | 3 | 1 | | 3 | | | 2 |
| CO3 | 3 | 3 | | 3 | 1 | | 1 |
| CO4 | 3 | 2 | 1 | 3 | 1 | | 2 |
| CO5 | 3 | 1 | 1 | 2 | 1 | | 3 |

*Legend: 3-High Correlation, 2-Medium Correlation, 1-Low Correlation*

Instructional Strategy

- It is advised that teachers take steps to pique pupils' attention and boost their learning confidence.
- To help students learn and appreciate numerous concepts and principles in each area, teachers should provide examples from daily life, realistic situations, and real-world engineering and technological applications.
- The demonstration can make the subject exciting and foster in the students a scientific mindset. Student activities should be planned on all the topics.
- Throughout the course, a theory-demonstrate-practice-activity strategy may be used to ensure that learning is outcome- and employability-based.
- All demonstrations/Hand-on practices are under a simulated environment (may be followed by a real environment as far as possible).

| WP231360 | Basic Workshop Practices | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 1 | 0 | 2 | 2 |

Assessment Methodology

| | Continuous Assessment (40 marks) | | | | End Semester Examination (60 marks) |
|---|---|---|---|---|---|
| | CA1 | CA2 | CA3 | CA4 | |
| Mode | Lab Assessment (Ex. 1, 2, 4, 7 & 8) | Lab Assessment (Ex. 3, 5, 6, 9 & 10) | Model Exam (Ex 1 to 10) | Class Assessment | Practical Examination |
| Duration | 2 hours | | 3 hours | During Pratice Hours, every exercise should be evaluated to 10 marks | 3 hours |
| Exam Marks | 80 | 80 | 100 | 100 | 100 |
| Converted to | 10 | 10 | 10 | 10 | 60 |
| Marks | 20 | | 20 | | 60 |

| WP231360 | Basic Workshop Practices | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 1 | 0 | 2 | 2 |

| THEORY | | |
|---|---|---|
| Unit I | SAFETY | |
| Introduction to safety – safety slogans – personal safety – personal protective Equipment - safety signs – caution sign, fire safety sign – sign posters – Industrial safety – machine safety rules – safety working practices, precaution to be taken to prevent electric shock-5S Principle – Sort, Set in order, Shine, Standardize and Sustain | | 3 |
| Unit II | DIMENSIONING SYSTEM | |
| Limits - fits – tolerances – Allowances - types of fits – hole basis system - shaft basis system – simple examples – difference – geometric dimensioning – flatness, straightness, circularity, concentricity, run out, parallelism, perpendicularity, Angularity, cylindricity | | 3 |
| Unit III | BASIC MEASURING INSTRUMENTS | |
| Basic instruments – steel rule, divider, calliper, try square, measuring tape, vernier calliper, micrometer - inside micrometer, outside micrometer - protractor- height gauge - dial gauge - V block, surface plate radius gauge, sine bar, slip gauge set, feeler gauge, wire gauge, Voltmeter, Ammeter, Multimeter. | | 3 |
| Unit IV | BASIC TOOLS | |
| Fitting : Work holding devices – bench vice, machine vice, fixture - tool holding devices – hacksaw frame, drill chuck, sleeve – fitting tools – files - types – punches - center, dot punches – hammer – types - claw hammer- scribers – chisel - drill bit - straight shank - Tapper shank-hand reamer -hand taps. Screwdriver – types, uses - cutting pliers-types, uses, hand drilling machine.<br><br>Wiring : Types of electrical wiring system – Single phase wiring - Three phase wiring – differences & applications<br><br>Plumbing : Pipe vice, wrenches- types - pipe wrench, adjustable wrench, chain wrench, pipe cutter, Solution to join pipes, thread sealing tape for pipe fitting-screws-types. | | 3 |
| Unit V | BASIC PRACTICES | |
| Fitting - Tools - Cutting practice – Filing practice.<br>Wiring – Tools - wiring symbols - Circuit – Connection practice.<br>Plumbing – Tools – type of joints - Joint practice. | | 3 |

Note: 1 Mark questions should be prepared unit wise (I to IV) as a question bank, the same can be used for the end semester examinations for 20 marks

| WP231360 | Basic Workshop Practices | L | T | P | C |
|---|---|---|---|---|---|
| Practicum | | 1 | 0 | 2 | 2 |

| PRACTICAL | | |
|---|---|---|
| Ex.No | Name of the Exercise | Hours |
| 1 | Fitting - Cutting & Filing of a profile | 2 |
| 2 | Fitting - Drilling, Reaming, Tapping | 2 |
| 3 | Fitting - L-Mating | 2 |
| 4 | Wiring – Draw the circuit diagram and connect for the connection of Two lamp, two switch with socket – parallel and series connection. | 2 |
| 5 | Wiring - Draw the circuit diagram and connect the connection for Fan-switch-regulator. | 2 |
| 6 | Wiring - Draw the circuit diagram and connect for the Stair case wiring | 2 |
| 7 | Installation of a battery, Charging and testing a Battery with hydrometer | 2 |
| 8 | Plumbing - Connect a tap using - PVC pipe, fittings and a tap | 2 |
| 9 | Plumbing – Connect the pipe line for the Sink / wash basin | 2 |
| 10 | Plumbing - Connect the pipe line for the connection for Rain water harvesting | 2 |
| Practice + Continuous Test + Revision | | 10 |
| TOTAL HOURS | | 30 |

**Suggested list of students activity**

Prepare/Download a specification of the following:

- Various tools & Equipment in various shops.
- Precision equipment in the workshop.
- Various machinery in the workshop.
- Visit any fabrication/woodworking workshop and prepare a report.
- Prepare a 5S chart for each machine in your workshop and maintain this report during your Lab hours.

**Text Books**


- A Textbook of Manufacturing Process, Gupta, J.K., Khurmi, R.S. S.Chand and Co. New Delhi ISBN:81-219-3092-8 (Workshop Tech.) Publication.
- A Text Book of Electrical Technology B.L.Theraja, A.K.Theraja – S.Chand& Company Ltd.

### Reference Books


- Basic Manufacturing "Roger Timings" Third Edition – Newnes, An imprint of Elsevier.
- Industrial Organisation and Engineering Economics – "T.R. Banga, S.C.Sharma"- Khanna Publishers
- Industrial Engineering and Management "O.P.Khana" – Dhanbat Rai Publications.
- Machine Drawing -K.L.Narayana, P.kannaiah, K.Venkatareddy – New Age International Publishers.
- Workshop practices, H S Bawa, Tata McGraw-Hill, 2009
- Elements of workshop Technology, Hajra Choudhury S. K., Hajra Choudry A.K. and Nirjhar Joy.
- Workshop Technology by Chapman W.A.J and Arnold E.


### Web-based/Online Resources

https://onlinecourses.nptel.ac.in

### Additional Instructions

- For the record of work done notebook or manual may be used. In this, the student should draw a diagram, and mention the readings/observations, calculations and result manually. The same has to be submitted for the end-semester examination on the first attempt.
- The proper safety procedure and norms should be followed with proper uniform (Khaki pants & half-hand shirt) with safety shoes during the practices.
- All the Exercise should be completed, One Exercise should be given by lot or question paper received from DOTE should be followed for the end semester Examination.

### Allocation of Marks

| Part | Description | Marks |
|---|---|---|
| Fitting / Wiring / Plumbing | | |
| A | Marking / Circuit diagram | 25 |
| B | List of tools | 10 |
| C | Cutting and Filing / Circuit / Pipe Connection | 25 |
| D | Dimension / Verification of Connection | 20 |
| E | Written Test (Theory Portion) | 20 |
| **TOTAL MARKS** | | **100** |

Note: One Mark questions shall be given from the Theory Portions. 20 X 1 = 20 Marks

| DS231270 | Digital Workplace Skills | L | T | P | C |
|---|---|---|---|---|---|
| Practical | | 0 | 0 | 4 | 2 |

## Introduction

Being able to embrace new technology in the workplace helps to streamline working processes. Digital workplace skills provide knowledge for sharing and collaboration in many new and effective ways. It is used in a connected digital environment providing access to share, present, and report information effectively and efficiently to increase productivity in a safe & secure environment.

## Course Objectives

The objective of this course is to enable the student to

1. Introduce the basics of computer hardware, operating systems, and Internet usage.
2. Explore various office productivity tools and text processing.
3. Apply various information analysis tools with the help of spreadsheets.
4. Understand the effective presentation of information.
5. Identify the communication and security tools for information protection.

## Course Outcomes

After successful completion of this course, the students should be able to

CO1: Demonstrate the ability to use various operating systems and internet utilities.
CO2: Experiment various office productivity tools.
CO3: Analyze the information gathered with the help of spreadsheet
CO4: Explore the various communication tools available
CO5: Identify the appropriate tools for securing the information.

**Pre-requisites:** Nil

## CO/PO Mapping

| CO / PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 |
|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | 3 | | | 3 | 1 |
| CO2 | 3 | 3 | 3 | | | 3 | 2 |
| CO3 | 3 | 3 | 3 | | | 3 | 1 |
| CO4 | 3 | 3 | 3 | | | 3 | 2 |
| CO5 | 3 | 3 | 3 | | | 3 | 2 |

*Legend: 3-High Correlation, 2-Medium Correlation, 1-Low Correlation*

| DS231270 | Digital Workplace Skills | L | T | P | C |
|---|---|---|---|---|---|
| Practical | | 0 | 0 | 4 | 2 |

Assessment Methodology

| | Continuous Assessment (40 marks) | | | End Semester Examination (60 marks) |
|---|---|---|---|---|
| | CA1 | CA2 | CA2 | |
| Mode | Practical Test (Ex. 1 to 5) | Practical Test (Ex. 6 to 10) | Practical Record Submission | Practical Examination |
| Duration | 2 hours | | -- | 3 hours |
| Exam Marks | 40 | 40 | 20 | 100 |
| Converted to | 10 | 10 | 20 | 60 |
| Marks | 40 | | | 60 |

| DS231270 | Digital Workplace Skills | L | T | P | C |
|---|---|---|---|---|---|
| Practical | | 0 | 0 | 4 | 2 |

| Unit I | INTRODUCTION TO DIGITAL WORKPLACE | |
|---|---|---|
| Basics of computer - understanding of various computer hardware components (CPU, Memory unit, Display, keyboard, mouse, hard disk and other peripheral devices) and operating systems (Windows, Linux) | | 2 |
| Ex No 1<br>a) Basic Navigations in Operating Systems - Windows, Ubuntu etc<br>b) Usage of Browsers (Edge, chrome etc)<br>c) Usage of search engines (Google, Bing etc)<br>(Students have to use any one tool in Board Examination for each of above exercise) | | 4 |
| **Unit II** | **BASIC PRODUCTIVITY TOOLS** | |
| Exploring office tools- word document creation, basic editing, formatting, Tables, Page Break, Equations, Hyperlinks, and Pictures. | | 2 |
| Ex No 2<br>Create a document with basic editing, formatting options, Tables, Equations, Hyperlinks, Pictures | | 4 |
| Ex No 3<br>Create a standard covering letter and use mail merge to generate customized letters and generate labels by creating a database. | | 4 |
| **Unit III** | **INFORMATION ANALYSIS** | |
| Sorting, Filtering, and creation of different charts. Print Preview, Printing, Shortcuts and Exercises. –using Excel /Google Sheets. | | 2 |
| Ex No 4<br>Spreadsheet creation, data handling, formatting, calculations using formulae and functions using Excel / Google Sheets. (Students have to use any one tool in Board Examination) | | 4 |
| Ex No 5<br>Sorting, Filtering, and creation of different charts. Print Preview, Printing-Using Excel / Google Sheets. (Students have to use any one tool in Board Examination) | | 4 |
| **Unit IV** | **INFORMATION PRESENTATION** | |
| Creation of presentation, formatting, video and sound, slide animation, shortcuts – MS Power point, Google slides. Canva, Figma –designing. | | 4 |
| Ex No 6<br>Creation of Presentation, editing, saving, Slide creation, Charts, Tables, Pictures, Smart Art, Slide Number, Header, Footer, Date, Shapes, Video and Sound. Slide Animation, Running a slide show, Print Preview. –PowerPoint, Google slides etc<br>(Students have to use any one tool in Board Examination) | | 4 |

| DS231270 | Digital Workplace Skills | L | T | P | C |
|---|---|---|---|---|---|
| Practical | | 0 | 0 | 4 | 2 |

| | |
|---|---|
| Ex No 7.<br><br>Designing with Canva, Figma.<br>(Students have to do any one tool in Board Examination) | 4 |
| **Unit V** **COMMUNICATION TOOLS AND INTRODUCTION TO INFORMATION SECURITY** | |
| Introduction to email and usage, overview of video and web conferencing tools, texting tools. Productivity tools in the browser-extension, Introduction to cyber security. Information management-Create a repository using Google Drive. | 3 |
| Ex No 8<br>a. Scheduling–meetings–Google Calendar.<br>b. Mail–Gmail<br>c. Information management- Collection of student Bio data using google forms<br><br>Ex No 9<br>Hands-on Video Conferencing Experience with Webex, zoom ,Google Meet etc (Any one tool for board practical examination).<br><br>Ex No 10<br>Password protection for sheets, Google drive sharing–permission. | 4<br><br>4<br><br>4 |
| Internal Assessment | 4 |
| **TOTAL HOURS** | **60** |

**Text Books**

- NCERT, Chapter 1-3: Computer System, Encoding Scheme and Number Systems, Emerging Trends, Class XI, 2023.
- Carey, P., Des Jardins, C., Shaffer, A., Shellman, M. and Vodnik, S., New Perspectives Microsoft Office 365 & Office 2019: Introductory. Cengage Learning. ISBN:978-0357025741

**Reference Book**

- LawrenceMiller,KevinStrohmeyer,andMarkMargevicius,DigitalWorkspace,2019 by John Wiley & Sons Inc., Hoboken, NewJersey
- AnandShinde , Introduction to Cyber Security : Guide to the World of Cyber Security, Notion Press, 1st edition, 2021, ISBN:978-1637816424.

**Web-based/Online Resources**

https://www.futurelearn.com/info/blog/the-complete-guide-to-digital-skills
https://applieddigitalskills.withgoogle.com/
https://resources.owllabs.com/blog/video-conferencing-tools
https://www.canva.com/
https://www.figma.com/

| DS231270 | Digital Workplace Skills | L | T | P | C |
|---|---|---|---|---|---|
| Practical | | 0 | 0 | 4 | 2 |

Allocation of Marks for End Semester Examinations

| Part | Description | Marks |
|---|---|---|
| Fitting / Wiring / Plumbing | | |
| A | Aim | 10 |
| B | Procedure | 40 |
| C | Execution | 35 |
| D | Result | 10 |
| E | Viva-voce | 5 |
| TOTAL MARKS | | 100 |

| BE231280 | Basic English for Employability | L | T | P | C |
|---|---|---|---|---|---|
| Practical | | 0 | 0 | 4 | 2 |

## Course Objectives

This course has two parts. A 20-hour exercise-based course and 40-hour face-to-face course.

The aim of the face-to-face course is to help develop their English language, communicative and allied skills through a series of reading, listening, grammar, speaking and topical lessons. The methodology through which the lessons are facilitated provide more opportunities for the learners to use the language they have acquired with constant monitoring and feedback.

The exercise-based course is a series of lessons which will be monitored by the faculty of the college. Each lesson focuses on reading, writing, listening, speaking, grammar and vocabulary.

## Course Outcomes

Students will be able to:

1. Read and understand routine information and instructions, and the basic meaning of non-routine information only in a familiar area and re-reading as required.
2. Understand phrases and expression related to areas of personal, social and professional domains provided speech is clearly articulated.
3. Have basic conversations in English - in person and over the telephone
4. Successfully manage group discussion
5. Deliver short talks on familiar topics with confidence
6. Complete short essays on familiar topics
7. Use better and more varied vocabulary

## Course Content

### F2F COURSE CONTENT

### UNIT 1

Functional language (speaking) - Greetings, Introductions and Farewell - Reading (posters) - for gist and for detail - Grammar refresher - Functional language (writing) - likes and dislikesListening (monologue) - for gist and for detail - Reading (catalogues) - for gist and for detail Grammar - Present simple (Be verb)

| BE231280 | Basic English for Employability | L | T | P | C |
|---|---|---|---|---|---|
| Practical | | 0 | 0 | 4 | 2 |

## UNIT 2

Functional language (speaking) - Habits & routines using frequency - Functional language (Writing) - culture of a place - Listening (conversation)- gist and detail - Functional language (speaking) - Time References - Reading (news using past tense) - for gist and for detail - Grammar - Simple past - Functional language (Writing) - Describing past experiences - Listening (news using past tense) - gist and details

## UNIT 3

Reading (newspaper article) - for gist and for detail - Grammar - Simple future - Functional language (speaking) - future plans - Functional language (Writing) - Making choices - Listening (newspaper article)- for gist and detail - Reading (signs and notices) - for gist and for detail - Grammar – Articles - Listening (announcements) - for gist and for detail

## UNIT 4

Functional Language (speaking) - Expressing Opinions - Functional language (speaking) - Likes and dislikes - Reading (job advertisements) - for gist and for detail - Grammar – Pronouns - Listening (news)- gist and detail Functional language (speaking) – Thanks and apologies Functional language (speaking) – agree and disagree - Reading (email) – for gist and for detail

## UNIT 5

Grammar – Prepositions - Listening (directions) - gist and details - Functional language (speaking) – Giving directions - Functional language (speaking) - enquiring/asking questions - Reading (newspaper article) - for gist and for detail - Grammar – modals Listening (conversation)- for gist and detail - Functional language (speaking) - day to day transactions (banks, post office, shops)

## EXERCISE BASED COURSE

## UNIT 1

Reading (descriptive) - for gist and detail - Grammar - Adjectives - Mind-mapping and writing structure - Listening (descriptive) - for gist & detail

| BE231280 | Basic English for Employability | L | T | P | C |
|---|---|---|---|---|---|
| Practical | | 0 | 0 | 4 | 2 |

## UNIT 2

Functional Language (writing) - Describe personal experiences - Reading (prospectus) - for locate and isolate - Grammar - Conjunctions - Functional language (speaking) - Making comparisons

## UNIT 3

Listening (prospectus) - for locate and isolate - Functional Language (speaking) - expressing feelings and emotions - Reading (geographical information) - for gist and detail – Punctuations

## UNIT 4

Functional Language (speaking) - giving reasons and explanations - Listening (geographical information) - for gist & detail - Functional Language (writing) - Making appointments & reservations - Reading (rules & regulation) - for gist and detail

## UNIT 5

Grammar – Adverbs - Functional Language (Speaking) - Accepting & Rejecting offers and invitations - Listening (rules and regulations) - for gist & detail - Phonics - Commonly Made Speaking Errors

## For Further Reading

- English Grammar and Composition – Wren and Martin
- The Elements of Style – Strunk and White
- The Elevate Series (Improve English skills) – Shefali Ray, Samathmika Balaji and Simran Luthra
- Common Errors in Everyday English – Saumya Sharma
- Spoken English for My World – Sabina Pillai
- Email Writing for Beginners: Examples, Etiquette, and Mistakes – Yogesh Vermani
- Malgudi Days – RK Narayan
- Time Stops at Shamli – Ruskin Bond
- The Blue Umbrella – Ruskin Bond
- Here, There and Everywhere – Sudha Murthy

| BE231280 | Basic English for Employability | L | T | P | C |
|---|---|---|---|---|---|
| Practical | | 0 | 0 | 4 | 2 |

**Reference**

A workbook will be provided to each student for future reference.

**Software Requirement**

- Chrome version 52+, or Firefox version 50+, or Edge Windows 10 build 15019
- Operating System – Windows7+, Ubuntu
- Access to You Tube
- Access to https://english.steptest.in/
- Stable internet connection with 2Mbps speed via Wi-Fi or Ethernet or 4G hotspot

Hardware Requirement

- Desktop or laptop
- Compatible speakers or headphones with microphone
- Projector

# Standard Operating Procedure : Club Activities

## Integrated Learning Experience [ILE]

| | |
|---|---|
| **Course Name: Club Activities** | **Code #: AC231511** |
| **Semester: I** | **Skill Areas:** Collaboration, Ownership, Interpersonal Skills |
| **Duration: 30 Periods** | |

### Purpose:

Club activities provide a platform for students with similar interests to engage, participate in events, workshops, and competitions. This fosters collaboration and skill development in various fields.

### Learning Outcomes:

At the end of the course, students will be able to:

1. Collaborate and work in interdisciplinary teams towards contributing effectively
2. Learn or enhance skills through workshops, competitions, and experiential learning.

### Focus:

During club activities students should prioritize key focus areas to enhance their learning and impact. Here are some focus areas to consider:

1. Collaboration & Communication
2. Identify strengths and weaknesses, and learn from experiences to foster personal growth

### Role of the Facilitator:

The faculty facilitator's role is crucial in guiding and supporting students in club activities. Key aspects of their role include:

1. **Mentorship and Guidance:** Faculty facilitators act as mentors, providing one-on-one or group guidance to students involved in the club.

2. **Creating a Supportive Learning Environment:** Facilitators will nurture a supportive, inclusive environment in the clubs where students freely express and learn collaboratively. They provide a platform for like-minded students to engage, collaborate, and participate.

### Guided Activities:

For Club Activities, students can engage in learning and developing a new skill or enhancing their skill by involving & actively participating in one or more clubs of their interest. These clubs can be used as a platform for Personal growth.

They may include but are not limited to the following clubs: Tamil Mandram, Music, Dance, Math, Chess, Arts, Photography, Sports, Astronomy, Science, Robotics, English, Theater, NCC, NSS, Digital Media Club, Cooking, UN Sustainable Development Goal, YRC (Youth Red Cross), Olympiad clubs, etc. The Outcome can be achieved through conducting **Competitions and Challenges.**

## Period Distribution

| S.No | Guided Activities | Period |
|---|---|---|
| 1 | Enrollment to Clubs<br>1. Invite club representatives along with Faculty to give short presentations, and collect names of students who are interested to join<br>2. Students should list their top 3 preferred clubs based on their interests and submit to the respective club representative | 2 |
| 2 | Exploring of Clubs<br>1. Ensure students understand their responsibilities as club members.<br>2. Emphasize the importance of commitment and regular participation.<br>3. Explore with club representatives about planning and hosting competitions, or events for the club. | 6 |
| 3 | Learn & Exhibit<br>1. Encourage students to participate actively and showcase their skills.<br>2. The Faculty should provide a necessary platform to enhance students skills, learn new skills, and exhibit skill through various competitions, events or initiatives. | 20 |
| 4 | Recognition<br>1. Acknowledge the efforts and contributions of individual members as well as the whole club | 2 |

## Closure:

No formal documentation is needed for course completion, but students must participate in at least one or more of the clubs meeting the 30 Period Requirement.

## Assessments:

No formal assessments are required for the Innovation and Entrepreneurship, Cub activities or Community Initiatives.

## References/Resource Materials:

The references and resource materials required for club activities may vary based on the personal focus, goals, and also resources available at each college. However, here are some general reference materials and resources that may be helpful:

1. **Facilities and Spaces:** Some clubs may require access to specific facilities or spaces. This can include classrooms, laboratories, meeting rooms, performance spaces, exhibition halls, or outdoor areas.

2. **Coaching:** Students may require coaching from faculty members or professionals with relevant knowledge and experience related to the club.

3. **Online Resources:**
    1. How to choose the Right Club for your personal growth? https://www.topuniversities.com/student-info/student-stories/5-common-mistakes-avoid-when-choosing-student-clubs
    2. How to make your club great? https://www.pearson.com/ped-blogs/pearsonstudents/2021/04/11-tips-to-make-a-any-college-club-great.html

# Standard Operating Procedure : Induction Program - I

## Integrated Learning Experience [ILE]

| Course Name: Induction Program - I | Code #: AC231510 |
|---|---|
| Semester: I | **Skill Areas:** Interpersonal Skills, Cultural Integration |
| Duration: 40 Periods | |

### Purpose:

The transition from school to college life is one of the most challenging events in a student's life. The Induction Programme helps new students adjust, learn institutional values, build bonds, and explore their larger purpose. The students learn about the institutional policies, processes, practices, culture and values.

### Learning Outcomes:

At the end of the course, students will be able to:

1. Feel comfortable in the new college environment.
2. Students comprehensively understand the curriculum, preparing for their academic journey.
3. Get guidance for 1st year that lays a strong foundation for students' academic success in the initial semesters.
4. Experience diverse activities, promoting holistic development.
5. Connect with faculty, including the Principal, HoD, and department faculty.

### Focus:

The induction program focuses on providing clarity and support for a successful academic journey. Key areas include adjustment, comfort in the new environment, fostering institutional culture, building bonds, and promoting self-exploration. Some key focus areas include

1. Credit System and GPA/CGPA Assessment
2. Diverse Classes at the End
3. Theory, Laboratory, and Practicum Sessions
4. Assessment Methods
5. Internship Opportunities
6. Fast Track Courses
7. Exposure to Extracurricular Activities
8. Course Add/Drop
9. Examination Withdrawal
10. Role of a Mentor
11. Choosing Pathways

### Role of the Facilitator:

The SIP committee comprises the Head of the Institute, Heads of various departments, Senior Faculty,

Senior Students (Second and Final Year), and Alumni. Their roles are as follows:

1. **Head of the Institute:** Explains new regulations from DoTE, institute rules, and significant changes in the new regulations.
2. **Head of the Department:** Walks through department facilities, and discusses achievements of senior and alumni students.
3. **Senior Faculty**: Guides diploma students on post-program pathways with faculty mentor assistance.
4. **Senior Students:** Introduce student clubs, and conduct department and lab tours.
5. **Alumni:** Share post-graduation opportunities available to diploma students.

## Guided Activities:

The SIP should have the below list of activities.

### Period Distribution

| S.No | Guided Activities | Period | Day |
|---|---|---|---|
| 1 | Registration, Formation of student classroom groups of respective programs & Formation of Student Representatives | 3 | 1 |
| 2 | Presentation cum Interactive Session with Important Institution Functionaries like Head of Institute, Principal, HoDs, etc. | 3 | |
| 3 | Visit to all departments & facilities of the Institution | 2 | |
| 4 | Ice breaking activity for the new students & Self Introduction of some newly joined students | 3 | 2 |
| 5 | Introduction to Various Clubs & Community Initiatives; A short session on the importance of joining such initiatives will be taken | 2 | |
| 6 | Interaction with Senior Students | 1 | |
| 7 | Interaction with Alumni Students | 2 | |
| 8 | Talks, Lectures or Workshops by Eminent People from varying domains - This may include motivational talks, personality development, human values, career development, group activities, social awareness lectures etc | 8 | 3 |
| 9 | A Talk by training and placement cell; Career opportunities for students, placement activities in college; placement process | 4 | 4 |
| 10 | Talk on Respective Program scheme of studies and details of courses, examination pattern, types of courses, credit system, assessment methods, fast-track option, course add/drop, examination withdrawal, internship, passing and eligibility criteria, attendance requirements by respective program coordinator | 4 | |
| 11 | Industrial Interaction; Local Industrial Visits or Interactions with Industry | 6 | 5 |

| | | | |
|---|---|---|---|
| | Experts invited to the Induction | | |
| 12 | Collection of student feedback on induction program - Make a report of Induction program by collecting student feedback | 2 | |

## Closure:

Upon the completion of the 40-hour SIP during the 1st semester, the head of the institute will conduct the closure session. The department head will maintain the SIP report, ensuring periodic updates and improvements to enhance the effectiveness of the program.

## Assessments:

SIP is intended for ice-breaking and familiarization purposes; hence no student assessment is required

## References/Resource Materials:

Regulation 2023 (R-2023) given by DoTE.

# Standard Operating Procedure : Growth Lab

## Integrated Learning Experience [ILE]

| **Course Name: Growth Lab** | **Code #: GL231490** |
|---|---|
| **Semester: I** | **Skill Areas**: Self-Discovery, Habit Formation, Mindset Development |
| **Duration: 30 Periods** | |

### Purpose:

The Growth Lab's key focus is on self-discovery and habit formation, empowering students to develop positive personal habits, enhance interpersonal skills, and instill strong values and ethics. Growth Lab aims to equip students with the tools and the mindset necessary for personal and professional growth, enabling them to thrive in an ever-changing world.

### Learning Outcomes:

The Growth Lab aims to provide students with various learning outcomes, including:

1. Cultivate a growth mindset, empowering them to approach challenges resiliently, embrace learning opportunities, and persist in the face of setbacks.
2. Foster personal growth through reflective practices, enabling students to gain insights into their strengths, weaknesses, and areas for improvement.

### Focus:

While organizing and participating in the Growth Lab, students should focus on the following key areas:

1. **Mindful Habits:** Emphasize the importance of cultivating mindful habits in their daily lives. Encouraging students to be conscious of their actions, thoughts, and emotions can help them identify any negative patterns and replace them with positive and empowering habits.

2. **Self-reflection:** Students should engage in self-reflection to gain deeper insights into their own strengths, weaknesses, and areas for improvement. Taking the time to reflect on their experiences and learning helps in identifying personal growth opportunities.

3. **Goal Setting:** Students should set clear goals for their personal and professional development. Encourage students to set specific, measurable, achievable, relevant, and time-bound (SMART) goals.

### Role of the Facilitator:

College faculty play a crucial role in organizing the Growth Lab. Their responsibilities include:

1. **Facilitation:** Faculty lead and guide the students throughout the Growth Lab sessions. They provide instructions, facilitate discussions, and offer insights to foster a stimulating learning environment. They ensure that the sessions are engaging, interactive, and conducive to student participation.
2. **Mentorship:** Facilitators should Provide clear explanations and guidance on the importance of cultivating mindful habits in their daily lives and engaging in self-reflection. Help students understand how these practices contribute to their personal growth and development

## Guided Activities:

The Growth Lab shall incorporate the following guided activities to support the development of students. Here are some examples of guided activities that could be included:

### Period Distribution

| S.No | Guided Activities | Period |
|---|---|---|
| 1 | **Icebreaker and Program Introduction**<br>1. Conduct an icebreaker activity to foster a positive atmosphere and encourage student interaction.<br>2. Introducing the Growth Lab program and its objectives. | 2 |
| 2 | **Life Timeline Exercise**<br>1. Ask students to create timelines of significant life events, both positive and negative.<br>2. Ask to Reflect on how these events shaped their mindset and beliefs | 3 |
| 3 | **Gratitude Journaling**<br>1. Provide journals for students to write down five things they are grateful for.<br>2. Emphasize the importance of gratitude in changing perspectives. | 3 |
| 4 | **"Architect of My Fate" Activity**<br>1. Introduce the concept of personal responsibility for life choices.<br>2. Share personal stories: Encourage students to share experiences of owning their choices.<br>3. Divide students into groups, discuss topics like owning choices' influence on life, positive support system incidents.<br>4. Summarize the importance of personal responsibility | 4 |
| 5 | **Goal Setting and Mind Mapping**<br>1. Teach mind mapping & ask students to make mind maps for visualizing their personal goals.<br>2. Guide students in setting SMART goals for the semester. | 4 |
| 6 | **Habit Inventory Activity**<br>1. Ask students to list current habits (positive and negative).<br>2. Ask Students to Identify habits to change or develop and ways to achieve the change | 3 |
| 7 | **Breaking Bad Habits**<br>1. Discuss common obstacles to breaking bad habits, such as triggers and environmental cues.<br>2. Help students develop strategies for positive habit change.<br>3. Role-play scenarios to practice resisting temptation and | 3 |

| | | |
|---|---|---|
| | maintaining self-discipline. | |
| 8 | **Accountability Partners :**<br>1. Pair students up as accountability partners.<br>2. Instruct them to share their habit change goals and check in regularly to support each other's progress. | 2 |
| 9 | **Implementation Check-In During the Semester:***<br>1. Have students share their progress on the goals they have set on a monthly basis to the Facilitator<br>2. Discuss any challenges they faced and how they overcame them. | 2 |
| 10 | **Final Oral Presentation & Impact Assessment:****<br>1. Give students an opportunity to present their semester's journey and the changes they have experienced.<br>2. Faculty shall compile a brief report assessing program impact based on student feedback. | 4 |

**This guided activity is a continuous assessment activity conducted throughout the semester, once every month*
***This session is conducted as a half day session at the end of the semester to give students a platform to share their transformation and for the Facilitator to collect feedback to compile a brief report on the impact of the program*

## Closure:

After the end semester Growth Lab session concludes, the responsible faculty must submit a brief report assessing the program's impact on student development, comparing their initial state at the beginning of the semester with their progress at the end.

## Assessments:

No formal assessments required for Growth labs

## References/Resource Materials:

For the Growth Labs, the following references and resource materials may be utilized to support the learning and development of the students:

1. **Facilities & Spaces:** Growth labs may require access to specific facilities, resources or spaces. Faculty may need to coordinate with the college administration to reserve these as required.

2. **Online Resources:**
    1. How to Begin Your Self-Discovery Journey: 16 Best Questions https://positivepsychology.com/self-discovery/
    2. How to break a bad habit? https://www.health.harvard.edu/blog/how-to-break-a-bad-habit-202205022736
    3. How To Mind Map Yourself For Growth? https://mindmapsunleashed.com/how-to-mind-map-yourself-for-growth

# Standard Operating Procedure : Health & Wellness

## Integrated Learning Experience [ILE]

| Course Name: Health & Wellness | Code #: AC231513 |
|---|---|
| Semester: I | **Skill Areas:** Physical Fitness, Nutrition, Mental Health |
| Duration: 30 Periods | |

### Purpose:

The Health & Wellness course teaches students about health, fitness, nutrition, yoga, and mental well-being. It focuses on overall well-being, values, and creativity. The course also covers the dangers of substance abuse and online risks to promote emotional and mental health.

### Learning Outcomes:

Upon completion of the Health & Wellness course, students will be able to:

1. Demonstrate proficiency in sports training and physical fitness practices.
2. Improve their mental and emotional well-being, fostering a positive outlook on health and life.
3. Develop competence and commitment as professionals in the field of health and wellness.

### Focus:

During the conduct of the Health & Wellness course, the students will benefit from the following focus areas:

1. Stress Management
2. Breaking Bad Habits
3. Improving Interpersonal Relationships
4. Building Physical Strength & Inner Strength

### Role of the Facilitator:

The faculty plays a crucial role in effectively engaging with students and guiding them towards achieving learning outcomes. Faculty participation involves the following areas:

1. **Mentorship & Motivation:** The Facilitator mentors students in wellness and self-discipline while inspiring a positive outlook on health. Faculty teach stress management, fitness, and daily well-being.
2. **Promoting a Safe and Inclusive Environment:** The facilitator ensures a safe, inclusive, and respectful learning environment for active student participation and benefit.
3. **Individualised Support and Monitoring Progress:** The facilitator plays a crucial role in providing personalized support, monitoring and guidance to students.

## Guided Activities:

In this course, several general guided activities have been suggested to facilitate the achievement of desired learning outcomes. They are as follows:

1. Introduction to Holistic Well-being
2. Holistic Wellness Program- Nurturing Body, Mind, and Soul
3. Breaking Bad Habits Workshop

### Period Distribution

| S.No | Guided Activities | Period |
|---|---|---|
| 1 | Introduction to Holistic Well-being<br>1. Workshop on the interconnectedness of physical, mental, emotional, and spiritual well-being for the students<br>2. Wellness Wheel Exercise: Guide participants to assess their well-being in various life dimensions and set goals.<br>3. Workshop on Stress Management Techniques | <br>4<br>2<br>2 |
| 2 | Holistic Wellness Program - Nurturing Body, Mind, and Soul<br>1. Sessions on well-being through<br>a. Fitness (Outdoor Activity)<br>b. Nutrition (Indoor Sessions)<br>c. Mindfulness (Yoga & Meditation). | <br>8<br>2<br>6 |
| 3 | Breaking Bad Habits - Workshop on<br>1. Identifying & addressing unhealthy habits<br>2. Habit Replacement: Empowering them to create action plans for positive behavioural changes. | <br>3<br>3 |

## Closure:

Each student should submit a Page Handwritten Summary of their Learnings & Action Plan for the future.

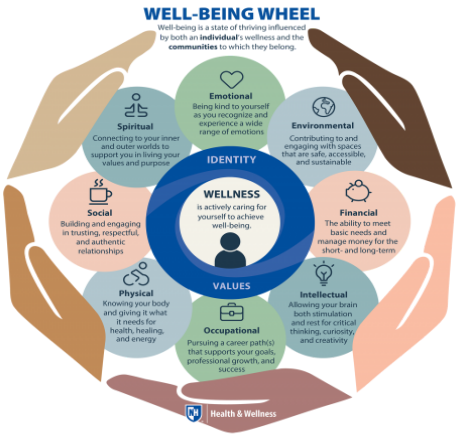
## Assessments:

No assessments are required for students.

## References/Resource Materials:

The course acknowledges that individual needs for references and resources may vary. However, here are some general reference materials and resources that may be helpful:

1. **The Well-Being Wheel:**



2. **Facilities & Spaces:** Some activities may require access to specific facilities, resources or spaces. Students may need to coordinate with the college administration to reserve these as required.

3. **Online Resources:**

    1. United Nations Sustainable Development Goals - Goal 3 - Good Health & Well-Being:https://www.un.org/sustainabledevelopment/health/
    2. Mindfulness and Meditation: Stanford Health Library offers mindfulness and meditation resources: https://healthlibrary.stanford.edu/books-resources/mindfulness-meditation.html
    3. Breaking Bad Habits: James Clear provides a guide on how to build good habits and break bad ones: https://jamesclear.com/habits

# Standard Operating Procedure : Shop Floor Immersion

## Tamil Nadu Polytechnic Course Regulation 2023

## Integrated Learning Experience [ILE]

| | |
|---|---|
| **Course Name: Shop Floor Immersion** | **Code #: AC231512** |
| **Semester: I** | **Skill Areas:** 5S Methodology |
| **Duration: 6 Periods** | |

### Purpose:

This semester, students will learn about the importance of '5S' through a shop floor workshop. '5S' helps reduce waste and improve productivity by organizing the workplace and using visual cues. It involves five steps: sort, set in order, shine, standardize, and sustain.

### Learning Outcomes:

At the end of the course, students will be able to:

1. Creates an organised and clean environment in their lab/workshop
2. Acquire self-discipline as they need to maintain the standards
3. Identify and eliminate wastes
4. Creating a safe workplace by reducing accidents caused by external factors

### Focus:

This course introduces the important concept of 5S, a fundamental skill used in various industries. It focuses on workplace organization and efficiency, which is essential for students entering the industry.

The 5S Methodology includes five steps:

- Sort: Remove unnecessary items to tidy up the space.
- Set In Order: Organize the work area with a place for everything.
- Shine: Clean and maintain the area to prevent dirt and grime.
- Standardize: Create written procedures to make new practices a norm.
- Sustain: Continuously commit to maintaining the organized and efficient workspace.

Additionally, safety is integrated throughout all the steps to improve workplace safety, not just efficiency.

### Role of the Facilitator:

Faculty introduce the concepts of 5S to the students and assign a specific activity to each team of 4 students and guide them to implement 5S to a specific lab or workshop.

### Guided Activities:

In the shop floor immersion course, few activities can be implemented to reach the desired course outcome. Here are some guided activities to be undertaken:

1. **Workshop (Learning Session):** The Faculty can take a session 5S Methodology covering the aspects of 5S like; What is 5S?, Why use 5S?, Advantages & Limitations, Case Studies, The 6th S - Safety.

2. **5S Implementation:** Students will implement 5S in a chosen lab. Faculty guides lab selection, assesses its state, gathers inventory, plans resources. After implementation, a post-assessment is done with faculty guidance.

### Period Distribution

| S.No | Guided Activities | Period |
|---|---|---|
| 1 | Workshop (Learning Session)<br>1. Faculty will conduct Session on 5S Methodology and its significance in the industry<br>2. Faculty need to conduct a Q&A Section to address questions, concerns & clarifications related to 5S | 2 |
| 2 | 5S Implementation<br>1. Preparation:<br>a. Faculty should identify lab/workshop needing 5S implementation<br>b. Faculty will form a teams of 4 students<br>2. Implementation<br>a. Develop an implementation plan for 5S<br>b. Document lab's current state by taking a photograph<br>c. Proceed with the implementation of 5S by assigning specific jobs to the student teams. | 4 |

## Closure:

The faculty in charge of the session is responsible for maintaining a one page record of the 5S implementation in the lab along with the "before" and "after" photographs.

## Assessments:

No assessments are required for students. The facilitator monitors & guides the students to implement the practical implementation of 5S in the lab/workshop.

## References/Resource Materials:

The references and resource materials required may differ depending on the department and type of lab 5S implementation is done. However, here are some general reference materials and resources that may be helpful:

1. **Facilities and Spaces:** 5S Implementation may require access to specific facilities or spaces. This can include access to workshops or labs.

2. **Online Resources:**
    1. What is 5S?: https://www.graphicproducts.com/articles/what-is-5s/
    2. 5S Guide: Improve efficiency with effective organisation: https://leanscape.io/what-is-5s-and-what-are-its-benefits/
    3. How to implement 5S in Workplace? https://www.simplilearn.com/implementing-5s-methodology-to-achieve-workplace-efficiency-article

# Standard Operating Procedure : Student-Led Initiative

## Tamil Nadu Polytechnic Course Regulation 2023

## Integrated Learning Experience [ILE]

| | |
|---|---|
| **Course Name: Student-Led Initiative** | **Code #: AC231514** |
| **Semester: I** | **Skill Areas:** Team Work, Presentation Skills, Communication |
| **Duration: 24 Periods** | |

### Purpose:

The aim is to promote active participation and collaboration among students, allowing them to learn from each other. One such initiative is the student-led tech talk series, where students can share knowledge and explore new technologies. These initiatives also provide resources and support to help students achieve their personal and career goals with guidance from the educational institutions.

### Learning Outcomes:

At the end of the course, students will be able to:

1. Collaborate and Communicate effectively
2. Develop interpersonal skills with self-confidence and resilience
3. Foster a culture of collaborative learning with peers by sharing knowledge effectively.

### Focus:

When conducting a student-led initiative, there are several focus areas that students should keep in mind to ensure a successful and impactful endeavour. Here are some key areas to consider:

1. Teamwork
2. Planning and Execution
3. Personal Growth and Learning

### Role of the Facilitator:

The role of a college faculty facilitator in student-led initiatives is crucial in providing guidance, support, and mentorship to the student participants. Here are some key aspects of the faculty facilitator's role:

1. **Mentorship and Coaching:** Faculty facilitators act as mentors, providing one-on-one or group coaching to students involved in the initiative. The faculty facilitator serves as an advisor, offering expertise, knowledge, and feedback to guide students in the planning and implementation of their initiatives.

2. **Resource Support:** Faculty facilitators assist students in accessing resources necessary for the success of their initiatives. They can help students identify relevant research or technical expertise.

## Guided Activities:

In a student-led initiative, various guided activities can be implemented. Here are some guided activities to be undertaken:

1. Identify Technology Areas/Themes
2. Team Formation for the Presentation
3. Oral Presentation Preparation
4. Oral Presentation
5. Feedback
6. One Page Report

***Note:*** *The student teams are expected to conduct an Oral Presentation in a seminar format, which means they* ***don't*** *need to create presentation slides. Instead, they will present their content through verbal communication during the presentation.*

### Period Distribution

| S.No | Guided Activities | Period |
|---|---|---|
| 1 | Introduction and Briefing<br>1. Identification of 8-10 Emerging Trends/Technology by the faculty<br>2. Briefing of the 8-10 Emerging Trends/Technology to the students | 3 |
| 2 | Team Formation for the Presentation<br>1. Team of 4 students are formed based on the topic that is selected<br>2. Faculty assigns the roles and responsibilities of each student in the team | 2 |
| 3 | Oral Presentation Preparation<br>1. Students browse the topics or go to the library to learn the topics for the presentation<br>2. Students develop contents for the presentation<br>3. Faculty mentor the students to form a outline for the presentation in the following format<br>a. Introduction<br>b. Working Principle<br>c. Advantages & Limitations<br>d. Applications | 7 |
| 4 | Oral Presentation<br>1. Students need to prepare & deliver the Oral presentation based on guidelines prescribed by the Faculty mentor<br>2. Deliver within the allotted time of 15 minutes<br>3. Include a Q&A Section covering a maximum of 3 minutes | 8 |
| 5 | Feedback<br>1. Mentor gives the feedback to the student team about<br>a. Presentation Contents<br>b. Presentation Delivery/Quality<br>c. Suggestions for improvisations for individual student | 2 |

| | | |
|---|---|---|
| 6 | One Page Report<br>1. Each Student submits a handwritten one-page summary of the oral presentation | 2 |

## Rubrics for the Evaluation

| Category | | SCORE | | | |
|---|---|---|---|---|---|
| | | **5—Excellent** | **3—Good** | **2—Fair** | **1—Needs Improvement** |
| **A** | **Quality of oral Presentation** | Well-structured Content and clear presentation; engages the audience with good preparation and confidence. | Sufficiently clear content and reasonably organized; presents with moderate confidence. | Somewhat clear with basic organization; needs improvement in coherence and confidence. | Unclear about topic and disorganized presentation; lacks coherence and preparation. |
| **B** | **Communication** | The delivery is confident, natural, and engaging. The student maintains excellent eye contact, gestures appropriately, and uses a clear and well-modulated voice. | The delivery is mostly confident and engaging but may have some minor areas for improvement in eye contact, gestures, or vocal delivery. | The delivery is somewhat engaging, but there are noticeable issues with eye contact, gestures, or vocal delivery. | The delivery is hesitant, and the student struggles with eye contact, gestures, or vocal delivery. |
| **C** | **Teamwork** | The team runs perfectly coordinated, with clear guidelines about each member's role. Each member has participated. | The team was mostly coordinated, but there were some moments of doubt and/or unbalance. A minority of the members of the group did not know what to do. | One or two members of the group have focused most of the presentation. The rest of the group did not have clear instructions about their role. | The team did not know when to speak, or what role they were having. Only one person leads the group. |
| | **SCORE** | (A+B+C)/15 Points | | | |

## Closure:

After finishing their student-led initiatives, each team member must write a one-page summary of the oral presentation by hand. This summary should include topics covered in the Oral presentation.

## Assessments:

No formal assessments are required for the student-led initiatives since it's just a platform for peer-to-peer to exchange knowledge and skills.

## References/Resource Materials:

Student-led initiatives may require a variety of resource materials to support their planning, implementation, and success. Here are some general requirements:

1. **Informational Resources:** These include textbooks, reference materials, and online information relevant to the topic or theme of the initiative.

2. **Facilities and Spaces:** Some initiatives may require access to specific facilities or spaces for presentations. This can include classrooms, laboratories, meeting rooms, performance spaces, exhibition halls, or outdoor areas.

3. **Online Resources:**
    1. How to Do a Presentation in Class? - https://www.wikihow.com/Do-a-Presentation-in-Class
    2. How to Give a Short Class Presentation Competently? - https://www.instructables.com/How-to-Give-a-Short-Class-Presentation-Competently/
    3. Best Practices for Oral Presentation: https://www.uow.edu.au/student/learning-co-op/assessments/presentations/
    4. How to keep up with the latest emerging trends? - https://pakwired.com/latest-technology-trends/
    5. Body Language Tips for Presentation - https://www.toastmasters.org/resources/public-speaking-tips/gestures-and-body-language