



**BHIWAPUR MAHAVIDYALAYA, BHIWAPUR**  
ARTS, COMMERCE & SCIENCE (JUNIOR & SENIOR)  
ACCREDITED WITH GRADE B (CGPA- 2.54) BY NAAC BENGALURU

**Syllabus of Bridge Course**  
**Academic Session 2021-2022**



जि. नागपूर

**Under Graduate**

(BA-I, B. Com-I, B. Sc.- I& B. Voc.-I)

## Foreword

The need to introduce a Bridge Course was to ease the transition of students from Higher Secondary to a University system of academics and examination patterns.

A week-long course designed by the faculties exposes the students to understand and facilitate the use of academic conventions. Bridge Course in Languages helps the students to prepare in developing their Reading, Writing, and Listening & Speaking Skills. Likewise Bridge Courses in Social Sciences, Science & Professional Courses create an amiable academic environment necessary for better understanding of the prescribed syllabi.

The advantage of Bridge Courses is that it creates a necessary basis to augment students' communication in social conversations, academic discussions and presentations.

Principal

तमसो मा ज्योतीर्गमय

जि. नागपूर

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### Undergraduate

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जि. नागपूर

**DEPARTMENT OF ENGLISH**

**COMPULSORY ENGLISH**

**Introduction:**

Students will be introduced to Prose, Poetry, Writing Skills, & Language Study. An introduction to understanding and writing on picture comprehension will be taken up.

Methodology: Lecture Method

Mode – online

Beneficiaries: Students of BA-I Compulsory English.

Duration: One week (22/9/2021 to 29/9/2021)

**Syllabus**

Unit –I

Introduction to Prose

Ways of interpreting a short story. History of short story.

Unit -2

Introduction to Personalities

Introducing successful personalities for their contribution to the society and nation. Google search to find additional information about the great personalities and their work

Unit -3

Introduction -Language Study

Practice worksheets to revise the understanding of parts of speech.

**Methodology**

**Lecture Method**

**Conclusion**

Bridge course is expected to yield visible outcomes as each unit was extensively dealt with referring to the Prescribed Units in the Syllabus.

## DEPARTMENT OF MARATHI

अभ्यासक्रम

बी.ए.भाग-1. मराठी

:-मराठीसाहित्य महामंडळाचेलेखनविशयक नियम-( षुध्दलेखन)

1) अनुस्वार (टिंब)

उदा. चिंच,तंटा,निबंध,गुलकंद,जातांना,पंडित, चंचल.

अ) नामांच्या व सर्वनामांच्याअनेकवचनीसामान्यरूपांवरविभक्तीप्रत्यय व षब्दयोगीअव्यय लावतानाअनुस्वार द्यावा.  
(एकवचन)(अनेकवचन)

उदा. लोकांना, मुलांनी, घरांपुढे, तुम्हांस, लोकांसमोर.

उदा.मुलास (एकवचन) मुलांस (अनेकवचन)

घरात (एकवचन) घरांत (अनेकवचन)

ब) लिंगानुसारबदलणाऱ्याविशेषणांच्यानपुसकलिंगी रूपावर येणारेअनुस्वार-

उदा. काळी-गोरी (मुलें) चांगली (फळें) पांढरी (फुलें)

अर्थभेद-उदा. नाव (नौका), नांव (नाम), पांच (संख्या) पाच (रत्नप्रकार), कां (कारण) का (काय)

2) ऱ्हस्व-दिर्घ

मराठीतीलतत्समइ-कारान्तआणिउ-कारान्त षब्ददिर्घलिहावा.

उदा. कवी, मती, गती. पाटी, जादू, विनंती.

:-उपान्त्य दिर्घई-ऊअसलेल्या षब्दाचाईकार-ऊकारसामान्यरूपाच्यावेळी-ह्रस्वलिहावा.

उदा. गरिबास,वकिलांना, सुनेला, वसुलाची, नागपुरास.

3) पूरहाग्रामवाचक षब्दकोणत्याहीग्रानामासलावतानादिर्घोपान्त्य लिहावा.

उदा. भिवापूर, नागपूर, तारापूर, चंद्रपूर, सोलापूर.

:-व्यावहारिकमराठी: स्वरूपआणिभूमिका-

अ) पत्रलेखन

ब) सारांषलेखन

क)बातमीलेखन

ड) मुलाखतलेखन

इ)भाशांतर

## DEPARTMENT OF POLITICAL SCIENCE

### Introduction

The need to introduce a Bridge Course was to ease the transition of students from Higher Secondary to a University system of academics and examination patterns.

A week-long course exposes the students to understand and use of academic conventions. Especially the Political Science Bridge Course helps the students to improve their understanding and capability to apply theories in practice. It enhances academic discussions and presentations.

### Objectives

- To make the students understand the basics of Political science
- To understand Indian as well as other democratic Political systems
- To understand and apply theories in use
- To write summaries and short reports in an academic style
- To make the students understand the basics of constitution

### Contact Hours

As per the schedule (Time Table)

### Beneficiaries

BA –I (All Students having political Science as an optional subject)

### UNIT I

- Introduction to subject
- Scope of the Political Science
- Basics of Political Science
- Introduction to Traditional and Modern Political Science

### UNIT II

- Basics of Indian Political System (Constitutional point of view)
- Indian parliament: President, Legislature and Executive
- Government (Central and State) and Administration
- Judicial System: Composition and salient features

### UNIT III

- Process and means of Political Socialization
- Political Parties (National and State)
- Pressure Groups and NGO

### UNIT IV

- Meaning of Theory and practice
- Introduction to Natural Rights, Human Rights and Fundamental Rights
- Introduction to Liberty and Equality
- Introduction to Justice

### Methodology

1. Use of Dialectic Method
2. Newspaper reading
3. Group discussion
4. Use of Audio, Visual Aid
5. Providing study materials (Book form, Xerox, audio and video aid)

### Conclusion

Bridge course objectives have been fulfilled. Bridge course being short and functional in nature yielded visible outcomes. Each unit based on diagnosis of the past experiences of the faculty provided an accelerated and focused learning opportunity for the students

## DEPARTMENT OF ECONOMICS

### BRIDGE COURSE REPORTING (Online Classes)

22/9/2021 TO 30/9/2021

Sr. No.	Name of Topic	Objective	Areas to be covered	Suggested Methodology	Teaching Aids	Time & Date
01	The meaning of economics and its connection with daily life	Explain the importance of economics in daily life.	Demand: Meaning, Definition & type of Demand Supply: Meaning & Definition	Lecture cum interaction With Students	Online Zoom & Google Meet App	45 Minutes 22/9/21 12.30 to 1.15
02	Basic Concepts in Economics: Capital, Wealth, Exchange, Rarity	Introduce students to basic concepts in economics	Different Concept Capital, Wealth, Exchange, Rarity	Lecture cum interaction With Students	Online Zoom & Google Meet App	45 Minutes 23/9/21 12.30 to 1.15
03	Fundamentals of Economics: Income, Consumption, Investment, Savings	To make students aware of the basics of economics	Areas of Income, Consumption, Investment, Savings	Lecture cum interaction With Students	Online Zoom & Google Meet App	45 Minutes 24/9/21 12.30 to 1.15
04	Giving detailed information to the students about the utility	Learn Utility analysis	Utility: Meaning, Definition, Types & Characteristics	Lecture method & Activity method	Online Zoom & Google Meet App	45 Minutes 28/9/21 12.30 to 1.15
05	Demand: Meaning, Definition and Features	To do a detailed analysis of the concept of demand.	Characteristics of Demand and Demand Table & Curve	Lecture method & Activity method	Online Zoom & Google Meet App	45 Minutes 29/9/20 1.30 to 2.15
05	Supply: Meaning and definition and features	To do a detailed analysis of the concept of Supply	Characteristics of Supply and Supply Table & Curve	Lecture method & Activity method	Online Zoom & Google Meet App	45 Minutes 30/9/21 1.30 to 2.15



## DEPARTMENT OF SOCIOLOGY

### Introduction

**Objectives** 1) The paper to induct the students to Sociology as the beginner of the subject.

2) the paper thus aims to expose the students to the basic concepts in sociology

Duration – One week

Contact Hours – as per the schedule (Time Table) 20/09/ 2021 to 25/09/2021

45 min each every day

Beneficiaries – B.A. I Sem. Sociology Students

Subject – Relevant Subjects of First Year

### Syllabus

Unit -1 Understanding Sociology

Unit -2 Basic concepts in sociology- Society, Groups, Community

Unit -3 Socialization – Meaning, processes and Importance

Unit -4 Social Structure

Methodology - Lecture method

Conclusion - Unit test conducted & found that these concepts cleared

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**DEPARTMENT OF HISTORY**  
**BRIDGE COURSE REPORTING**

<b>Sr. No.</b>	<b>Name of Topic</b>	<b>Objective</b>	<b>Areas to be covered</b>	<b>Suggested Methodology</b>	<b>Teaching Aids</b>
01	What is History? Its appearance and scope	To make the students aware of the meaning of history, its interpretation as well as the nature and scope of history	From ancient times to modern times	Lecture cum interaction With Students	White Board & Marker pen
02	Tools of history 1) Primary tools 2) Secondary devices	Explain the importance of primary and secondary tools to the students	Primary Tools - Physical Tools, Intangible Tools, Literary Tools, Non-Physical Tools	Lecture cum interaction With Students	White Board & Marker pen
03	Prehistoric	To impart knowledge of prehistoric times to the students	Paleolithic or Old Stone Age, Neolithic Age and Metal Age	Lecture cum interaction With Students	White Board & Marker pen
04	Subaltern, local and oral history	Explain the importance of Subaltern, local and oral history	From ancient times to modern times	Lecture cum interaction With Students	White Board & Marker pen
05	Studies and teaching methods in history	Explain to students the teaching and learning methods in history	From ancient times to modern times	Lecture cum interaction With Students	White Board & Marker pen
06	Important of History	Explain the importance of history	From ancient times to modern times	Lecture cum interaction With Students	White Board & Marker pen

## ENGLISH LITERATURE

### Introduction:

Students will be introduced to different literary terms and historical, social & Cultural background of English Literature from Elizabethan to Restoration. A brief glimpse of the Bridge Course will orient the learners to appreciate literature in its originality.

Methodology: Lecture Method

Mode – online

Beneficiaries: Students of BA-I English Literature as optional subject.

Duration: One week (22/9/2021 to 29/9/2021)

### Syllabus

Unit –I

Introduction to Section 1 – Poetry

Introduction to Elizabethan Age and style of writing poetry

Unit -2

Introduction to Section 1 – Essays

Introduction to the birth of essay writing and proponents of essay writers

Unit -3

Introduction to Drama

Drama – its inception and history

### Methodology

Lecture Method

### Conclusion

Bridge Course generated noticeable outcomes as each unit was extensively dealt with referring to the Historical, Social & Cultural Background.

**DEPARTMENT OF COMMERCE**

**DEPARTMENT OF ENGLISH**

**COMPULSORY ENGLISH**

**Introduction:**

Students will be introduced to Prose, Poetry, Writing Skills, & Language Study. An introduction to understanding and writing on picture comprehension will be taken up.

Methodology: Lecture Method

Mode – online

Beneficiaries: Students of BCom-I Compulsory English.

Duration: One week (22/9/2021 to 29/9/2021)

**Syllabus**

**Unit –I**

Introduction to successful personalities

Understanding Personality and ways to improve oneself in times of adversity d

**Unit -2**

Introduction to Short Stories

Application of the analysis to understanding personalities in the given short stories

**Unit -3**

Introduction -Language Study

Practice worksheets to revise the understanding of parts of speech.

**Methodology**

**Lecture Method**

**Conclusion**

Bridge course is expected to yield visible outcomes as each unit was extensively dealt with referring to the Prescribed Units in the Syllabus.

## DEPARTMENT OF MARATHI

### Marathi: Program Outcomes

- उद्दिष्टे:-
1. मराठी भाषेविषयी विद्यार्थ्यांमध्ये अभिरुची निर्माण करणे.
  2. साहित्यलेखनाची व वाचनाची आवड निर्माण करणे.
  3. विद्यार्थ्यांमध्ये असलेल्या सुप्त कलांगुणांना वाव देऊन त्यांच्यात साहित्यविषयक वृद्धिंगत करणे.
  4. साहित्यातून मानवतावादी दृष्टिकोण रुजविणे.

### Marathi: Course Outcomes

Class	Course	Outcomes (Students able to do)
F.Y. B.Com.	SEM I & II शब्दसाधना	By the end of this course, the students will be able to: CO1 भारतीय लोकशाहीचे मूल्य विद्यार्थ्यांमध्ये रुजविणे. CO2 ग्रामीण जनजिवन व शेतीनिष्ठेशी विद्यार्थ्यांची नाळ जोळणे. CO3 संताच्या व्यावहारिक विचारांचा परिचय घडविणे. CO4 शाहू महाराजाच्या आरक्षण विषयी विचारांचा परिचय घडविणे. CO5 काव्यातील रसग्रहणक्षमता विकसित करणे. CO6 विद्यार्थ्यांमध्ये आधुनिक मूल्य रुजविणे CO7 विद्यार्थ्यांमध्ये सामाजिक बांधिलकी निर्माण करणे. CO8 विद्यार्थ्यांमध्ये सर्जनशीलता निर्माण करणे.
S.Y. B.Com.	SEM III & IV भाषा दर्शन	By the end of this course, the students will be able to: CO1 मातृभाषेची आवड व जाणीव निर्माण करणे CO2 प्राचिन मराठीचे वैशिष्ट्य स्पष्ट करणे. CO3 विनोदी लेखनात खेळकरवृत्तीचे दर्शन घडविणे. CO4 संत साहित्यातून सामाजिक, सांस्कृतिक, आध्यात्मिक लोकशाहीचा पुरस्कार करणे. CO5 स्त्री विषयक जाणिव जागृती करणे. CO6 वृत्त लेखन व कल्पना विस्तार तंत्राची माहिती अवगत करणे.

5. साहित्यातून समाजातील प्रश्नांना वाचा फोडून त्यांचे निराकरण करणे.

ध्येय:-

1. भावी काळात विद्यार्थ्यांमधून साहित्यनिर्मिती करणे.
2. अध्यापन व अध्ययनात विद्यार्थ्यांना सहभागी करून संवादशील वातावरण निर्मिती करणे.
3. विभागात विविध उपक्रमांचे आयोजन करून मराठी भाषेचा दर्जा वाढविणे.
4. विद्यार्थ्यांमध्ये संशोधनवृत्ती वृद्धिंगत करणे.
5. मराठी भाषेची प्रयोगशाळा निर्माण करणे.

## SUBJECT: BUSINESS ECONOMICS

### Unit I:

1. Economics – Meaning,
2. Business Economics- Meaning, Scope and objectives
3. Difference between General Economics and Business Economics.

### Unit II

1. Micro Economics - Definition, scope, merits and demerits
2. Macro Economics- Definition, scope, merits and demerits.

### Unit III

1. Law of Demand, Examples.
2. Demand determinants,
3. Changes in demand
4. Exceptions to the law of demand
5. Elasticity of Demand

### Unit IV

1. Law of Supply, Examples. & Criticisms
2. Factors influencing supply



## SUBJECT: COMPANY LAW

### UNIT I

- कं॒पनीचा अर्थ (Company Meaning)
- कं॒पनीचा व्याख्या ( Company Definition )
- कं॒पनीचे वैषीष्टये ( Characteristics of Company )
- कं॒पनीचे प्रकार (Kinds of Company)

### UNIT II

- खाजगी क॒पनी व सार्वजनिक क॒पनीचा अर्थ (Distinction between Private and Public Company)
- खाजगी क॒पनी व सार्वजनिक क॒पनीयातील फरक ( Distinction between Company and Partnership Firm )
- सयुक्त क॒पनी व भागीदारी क॒पनी यातील फरक

### UNIT III

#### क॒पनीची स्थापना (Formation of Company)

- प्रव॒तनाचा अर्थ (Meaning of Promotion)
- प्रव॒तनाची व्याख्या(Definition of Promotion)
- प्रव॒तकाचा अर्थ (Meaning of Promoters)
- प्रव॒तकाची व्याख्या (Definition of Promoters)
- प्रव॒तकाची कार्ये (Duties of Promoters)

### UNIT IV

#### क॒पनीचे सभासद (Members of Company)

- भागधारक व सभासदाचा अर्थ (Meaning of Members & Shareholder)
- सभासदाची व्याख्या (Definition of Member)
- भागधारक व सभासदातील फरक (Distinction between a Member and a Shareholder)
- सभासदाचे प्रकार .(Kinds of Member)

## FACULTY OF SCIENCE

### OBJECTIVES OF THE COURSE

- To bridge the gap between subjects studied at pre-university level and the subjects they would be studying at the entry level of B.Sc. Programme.
- To develop soft skills among the students.
- To make the subject more comprehensive.

### METHOD OF TEACHING

Group discussion, question-answer method, PPT presentation.

Unit: I Grammar

A. Use of Tenses

B. Change the Voice

C) Articles

Unit II: Comprehension of Unseen Passage

Unit III: Vocabulary

Unit IV: Subjective and Objective Poetry

Unit V: Conversational Skills

A) Apologising And Responding to An Apology

B) Congratulating And Responding to Congratulations

Conclusion- The Bridge Course was fruitful for the students. It helped the students to improve their learning process. The overall response from the students was also satisfactory.



## DEPARTMENT OF MARATHI

### Marathi: Course Outcomes

Class	Course	Outcomes (Students able to do)
F.Y. B.Sc.	SEM I साहित्य सेतू	By the end of this course, the students will be able to CO1 विद्यार्थ्यांमध्ये साहित्य विषयक आवड निर्माण करणे CO2 वाचन संस्कृतीचा पुरस्कार करणे CO3 भारतीय संविधानाचे महत्व समजावून सांगणे CO4 मानवी मुल्यांची जपणूक करणे CO5 कविता लंखनाचे तंत्र अवगत करणे CO6 पर्यावरण विषयक जागृती निर्माण करणे CO7 व्यावहारिक मराठीचे महत्व समजावून सांगणे
	SEM I साहित्य सेतू	By the end of this course, the students will be able to CO1 संताचा मानवतावादी दृष्टिकोण विद्यार्थ्यांना समजावून सांगणे CO2 राष्ट्रिय एकात्मता व अखंडता टिकवण्यासाठी विद्यार्थ्यांना कार्यप्रवृत्त करणे CO3 नवकवितेचे तंत्र अवगत करणे CO4 स्वातंत्र्योत्तर परिस्थितीचे दर्शन घडवीने CO5 स्त्री समस्येला वाचा फोडणे, कृषि संस्कृतीबद्दल आपूलकी निर्माण करणे CO6 अनुवादाचे तंत्र अवगत करणे

### Marathi: Program Outcomes

उद्दिष्टे:-

1. मराठी भाषेविषयी विद्यार्थ्यांमध्ये अभिरुची निर्माण करणे.
2. साहित्यलेखनाची व वाचनाची आवड निर्माण करणे.
3. विद्यार्थ्यांमध्ये असलेल्या सुप्त कलागुणांना वाव देऊन त्यांच्यात साहित्यविषयक वृद्धिंगत करणे.
4. साहित्यातून मानवतावादी दृष्टिकोण रुजविणे.
5. साहित्यातून समाजातील प्रश्नांना वाचा फोडून त्यांचे निराकरण करणे.

ध्येय:-

1. भावी काळात विद्यार्थ्यांमधून साहित्यनिर्मिती करणे.
2. अध्यापन व अध्ययनात विद्यार्थ्यांना सहभागी करून संवादाशील वातावरण निर्मिती करणे.
3. विभागात विविध उपक्रमांचे आयोजन करून मराठी भाषेचा दर्जा वाढविणे.
4. विद्यार्थ्यांमध्ये संशोधनवृत्ती वृद्धिंगत करणे.
5. मराठी भाषेची प्रयोगशाळा निर्माण करणे.

## DEPARTMENT OF CHEMISTRY

### Notice

All the students of 1 year B.Sc. are hereby inform that, to prepare the students before starting the University prescribed Course for Bachelor of Science (B.Sc.), our College has been conducted 1 week Bridge Course from 04 Oct.2021 as per the Time Table given below. All the newly admitted students compulsorily attend the Course in their respective subject according to the time table

Bridge Course Time Table (Online) WEF 04 Oct.2021s

Day	1	2	3
	12.00 noon to 1.00 pm	1.00 pm – 2.00 pm	02.00 pm – 03.00 pm
Monday	Maths/Bot	Chem	Phy/Zoo
Tuesday	Maths/Bot	Chem	Phy/Zoo
Wednesday	Maths/Bot	Chem	Phy/Zoo
Thursday	Maths/Bot	Chem	Phy/Zoo
Friday	Maths/Bot	Chem	Phy/Zoo
Saturday	Maths/Bot	Chem	Phy/Zoo

**Concept-** A **Bridge Course** is a University-preparation course with an academic curriculum that is offered to mature students as a means of preparing for the intellectual challenges of a university education, successful completion of which is recognized as a basis of admission to the University. **Bridge Courses** are a tool to help students succeed in their graduate level studies.

**Necessity-** It is primarily offered courses to students who need to improve their understanding in subjects that relate to particular study programmes. **Bridge Courses** are short, focused learning programmes designed to help high school students to enter in higher education institutions. They will also be taught the connection between writing and thinking and how to use writing and reading for inquiry, learning, thinking, and communicate in specific situations. They will be required to produce competent, professional writing through planning, drafting, revising, and editing.

**Aim and Objectives-** The **objective** of the **Bridge Course** is to explain what is expected of students in Pre-University-level **classes** and to provide adequate foundation in the basic applied science subjects and English limited to moderate level so that students do not face any difficulty when the **classes** begin.

**Duration-** 1 week

**Commencement of Course:** 04 Oct.2021.

**Time-** Monday to Saturday at 1.00 pm to 2.00 pm

**Methods and Materials:**

- A screen to show the video and copies of the What is Chemistry? - Definition, Branches, & Tools lesson.
- PowerPoint presentation or Interactive board teaching and verbal teaching.
- Student computers.
- Text books for reference – theory and practical purpose

### **Syllabus Bridged**

#### **Inorganic Chemistry**

**Unit I-** Periodic table Periodic trends in properties of Elements - a) Atomic radius b) Ionization potential c) Electronegativity d) Ionic radius e) Density.

#### **Organic Chemistry**

**Unit I-** Some basic concept of Chemistry, Atomic and Molecular Structure, Periodic table and their properties, Solid State, Solution and Colligative Properties, Chemical Thermodynamics, Coordination Chemistry.

**Unit II-** Fundamentals in Organic Chemistry, Aliphatic (Alkanes Alkenes and Alkynes) and Aromatic Hydrocarbons, Alcohols Phenol and Amines, Introduction to Carbonyl and Carboxyl Chemistry, IUPAC nomenclature, Biomolecules, Chemistry in everyday life.

#### **Physical Chemistry**

**Unit I-** State of Matter 1. The three states of matter 2. Intermolecular interaction 3. Hydrogen bonding 4. The gaseous state 5. Boyle's law, Charles law. 6. Gay Lussac's law, Avogadro law 7. Kinetic theory - molecular speeds 8. Liquid state 9. Vapour pressure 10. Surface tension 11. Viscosity.

**Report-**

Department of Chemistry conducted the 1-week bridge course from dated **04 Oct.2021 to 09 Oct.2021.**

It proved to be the best platform for the students to interact with the faculty members, making it responsible for them to develop a strong relationship with the respective subject, advisors and other students and become confident for higher Graduation studies and placements.

## DEPARTMENT OF PHYSICS

### Notice

All the students of 1 year B.Sc. are hereby inform that, to prepare the students before starting the University prescribed Course for Bachelor of Science (B.Sc.) our college has been conducted 1 week Bridge Course from 04 Oct.2021as per the Time Table given below. All the newly admitted students are hereby informed to attend the course.

Bridge Course Time Table (Online) w.e.f. 04 Oct.2021

Day	1	2	3
Time	12.00 noon- 1.00 pm	1.00 pm-2.00 pm	2.00 pm-3.00 pm
Monday	Maths/Bot	Chem	Phy/Zoo
Tuesday	Maths/Bot	Chem	Phy/Zoo
Wednesday	Maths/Bot	Chem	Phy/Zoo
Thursday	Maths/Bot	Chem	Phy/Zoo
Friday	Maths/Bot	Chem	Phy/Zoo
Saturday	Maths/Bot	Chem	Phy/Zoo

**CONCEPT:** A bridge course for newly admitted students is conducted every year before the commencement of the first semester classes. Bridging courses are short, focused learning programmes designed to help students to link up to curriculum of degree course.

**NECESSITY:** It is observed that NCERT syllabus as it is about 20-30% vast than the previous state board syllabus. While those who have studied ICSE or CBSE in school are not much affected, but those from the state board syllabus may find it difficult to enter in the mainstream. Bridge course helps students to open up, think creatively and become responsible and independent students.

**AIMS AND OBJECTIVE:** The main objective of the course is to bridge the gap between subjects studied at pre-university level and subjects they would be studying at UG level.

**DURATION:** 1 week

**COMMENCEMENT OF COURSE:** 04 Oct.2021.

**TIME:** Monday to Saturday at 2.00 pm to 3.00 pm

### **SYLLABUS BRIDGED**

#### **UNIT1**

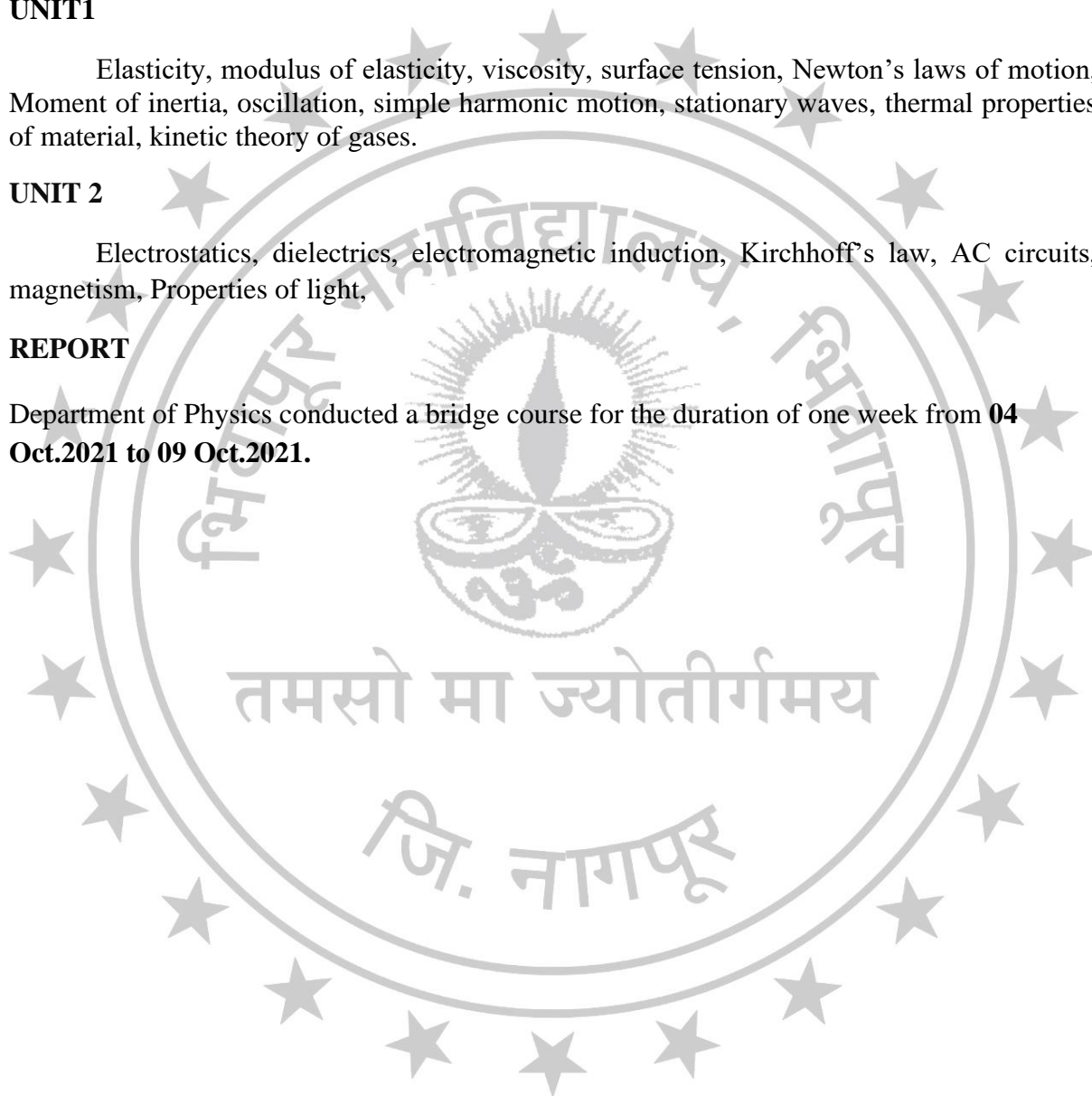
Elasticity, modulus of elasticity, viscosity, surface tension, Newton's laws of motion, Moment of inertia, oscillation, simple harmonic motion, stationary waves, thermal properties of material, kinetic theory of gases.

#### **UNIT 2**

Electrostatics, dielectrics, electromagnetic induction, Kirchhoff's law, AC circuits, magnetism, Properties of light,

#### **REPORT**

Department of Physics conducted a bridge course for the duration of one week from **04 Oct.2021 to 09 Oct.2021.**



## DEPARTMENT OF ZOOLOGY

Newly admitted students of B. Sc. I attended the Bridge Course. During the interaction with the faculty members, the students came out of their hesitation and it proved to be the best platform for the students to interact with the faculty members, making it responsible for them to build strong relationships with faculty, advisers and other students.

**Methods and Materials:** The course was conducted in online mode on Zoom App. The course was taught through PowerPoint presentation and intellectual videos. The test was conducted on the syllabus taught.

### INTRODUCTION:

Any study that involves animals as its primary focus can be considered a part of Zoology. Zoology is the branch which deals with the study of the animal kingdom, its classification, habits and habitats, living and extinct, morphology, physiology, embryology, anatomy, cytology, genetics, histology, neonatology, taxonomy and evolution.

Although familiar with subject zoology the entire syllabus of BSc. Zoology deals with new terms and topics which will be a problem for students coming from 12<sup>th</sup> class to understand in one stroke. So to revise, update and groom students with basics in theory and practicals a bridge course of Zoology subject is organized by Asst. Prof. Amit S. Thakare, Department of Zoology, Bhiwapur Mahavidyalaya, Bhiwapur.

### OBJECTIVE:

- To revise the basics of zoology subject and to introduce new topics and syllabus of B.Sc. I, zoology so that students get familiar with the terms which will be used during regular classes.
- To understand the fundamentals of the sub disciplines in biology including taxonomy, cell and molecular biology, genetics, physiology, biodiversity, ecology and applied zoology.
- To understand basic methods and aims of the science of biology.
- To make students able to demonstrate proficiency in the experimental techniques and methods of analysis appropriate for their area of specialization within biology.
- To make students able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.
- To make students able to identify the major groups of organisms with an emphasis on animals and be able to classify them within a phylogenetic framework. ,
- To make students able to compare and contrast the characteristics of animals that differentiates them from other forms of life.
- To develop students' practical biological skills.

Duration — One week (4<sup>th</sup> October 2021 – 9<sup>th</sup> October 2021)

Contact Hours — as per the schedule (Time Table)

Beneficiaries — B.Sc. I.

Subject — Zoology

### SYLLABUS

## Unit I - Animal kingdom:

- 1.1. Phylum Porifera, Phylum - Coelenterata (Cnidaria,) Phylum - Ctenophora.
- 1.2. Phylum Platyhelminthes, Phylum - Aschelminthes (Nemotoda), Phylum - Annelida
- 1.3. Phylum Arthropoda, Phylum – Mollusca, Phylum - Echinodermata.
- 1.4. Phylum Chordata (Hemichordata, Protochordata, Urochordata, Cephalochordata and vertebrata)

## Unit II Cell

- 2.1 Ultrastructure of prokaryotic and eukaryotic cell.
- 2.2 Different cell organelles- endoplasmic reticulum, golgi bodies, mitochondria, lysosome, nucleus, nucleolus.
- 2.3 Chromatin material- DNA, RNA, Mitosis and meiosis.
- 2.4 Human body systems and function.

## Unit III Environmental Biology

- 2.1 Principal layers of atmosphere- Exosphere, Thermosphere, Mesosphere, Stratosphere, Troposphere.
- 2.2 Lithosphere Hydrosphere, Biosphere
- 2.3 Energy Pyramids.
- 2.4 Global warming, green house effects, acid rain.

## Unit IV Applied Zoology

- 4.1 Aquaculture- Pisciculture, Prawn culture and Pearl culture
- 4.2 Sericulture, Apiculture, Lac culture, Vermiculture.
- 4.3 Crop pests
- 4.4 Animal pests

## MATERIALS AND METHODS

- A screen to show the video and copies of the What is Zoology? - Definition, Branches, & Tools lesson
- LCD with Power Point presentation or Interactive board teaching and verbal teaching.
- Student computers
- Text books for reference — theory and practical purpose
- Practical materials

## CONCLUSIONS:

At the end of the course learning outcomes will be:

- The student have an enhanced knowledge and appreciation of topics related to zoology subject.
- Be able to develop interest and will be confident to perform in examination.
- Be able to perform, analyses and report on experiments and observations in all academic sessions.
- Be able to integrate related topics from separate parts of the course.
- Able to Place biological knowledge in context and show an understanding of the way biologists think and of the historical development of biological thought.
- Demonstrate the ability to connect and apply biological knowledge to other disciplines and to integrate knowledge into their personal and professional lives;
- Demonstrate the ability to engage in critical, independent, and creative thinking; and
- Demonstrate proficiency in writing and speaking about biological concepts and research.

## DEPARTMENT OF BOTANY

### INTRODUCTION:

Any study that involves Plants as its primary focus can be considered a part of Botany. Botany is the branch which deals with the study of the plant kingdom, its classification, habits and habitats, living and extinct, morphology, physiology, embryology, anatomy, cytology, genetics, histology, neonatology, taxonomy and evolution.

Although familiar with subject Botany the entire syllabus of B.Sc. Botany deals with new terms and topics which will be a problem for students coming from 12<sup>th</sup> class to understand in one stroke. So to revise, update and groom students with basics in Theory and Practicals a Bridge Course of Botany subject is organized by Asst. Prof. Darshana S. Dhamdar , Department of Botany, Bhiwapur Mahavidyalaya, Bhiwapur.

### OBJECTIVE:

- To revise the basics of Botany subject and to introduce new topics and syllabus of B.Sc. I, Botany so that students gets familiar with the terms which will be used during regular classes.
- To understand the fundamentals of the sub disciplines in Biology including Taxonomy, Cell and Molecular Biology, Genetics, Physiology, Biodiversity, Ecology and Applied Botany.
- To understand basic methods and aims of the Science of Biology.
- To make Students able to demonstrate proficiency in the experimental techniques and methods of analysis appropriate for their area of Specialization within Biology.
- To make students able to relate the Physical features of the environment to the structure of populations, communities, and Ecosystems.
- To make students able to identify the major groups of organisms with an emphasis on Plants and be able to classify them within a Phylogenetic Framework. ,
- To make students able to compare and contrast the characteristics of Plants that differentiates them from other forms of life.
- To develop students Practical Biological skills.

Duration — One week

Contact Hours —

Beneficiaries B.Sc. I.

Subject — Botany

### SYLLABUS

#### Unit I -

What is Botany – Concept, meaning, Father of Botany, different Botanist & their work, Indian Botanist, evolution of Plants?

Systematic Botany – Concept of classification, How to write classification system, plant classification (5 kingdom System of classification), Important characters.

#### Unit II

Plant body – Introduction of Morphology, Introduction of Botanical terms & taxonomic terms, Economic importance of plant.

#### Unit III



Viruses and prokaryotes –Difference between prokaryotic cell and Eukaryotic cell,  
General characteristics of Viruses, Types of Viruses, Economic importance of Viruses.

### **MATERIALS AND METHODS**

- A screen to show the video and copies of the What is Botany? - Definition, Branches, & Tools lesson
- Student computers
- Text books for reference — theory and practical purpose
- Practical materials

### **OUTCOMES:**

At the end of the course learning outcomes will be:

- The student have an enhanced knowledge and appreciation of topics related to Botany subject.
- Be able to develop interest and will be confident to perform in examination.
- Students have been familiar with basic Botany
- Be able to integrate related topics from separate parts of the course.
- Able to Place biological knowledge in context and show an understanding of the way biologists think and of the historical development of biological thought.
- Demonstrate the ability to connect and apply biological knowledge to other disciplines and to integrate knowledge into their personal and professional lives;
- Demonstrate the ability to engage in critical, independent, and creative thinking; and
- Demonstrate proficiency in writing and speaking about biological concepts and research.

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## DEPARTMENT OF MATHEMATICS

### SYLLABUS FOR BRIDGE

A Bridge Course for newly admitted students is conducted every year before the commencement of the first semester classes

#### Objective

- 1) The main objective of the course is to bridge the gap between subjects studied at School/ Jr college level and subjects they would be studying in B.Sc. Graduation.
- 2) To make "learning of Mathematics as a pleasant experience".
- 3) To improve confidence of the slow learners to meet the knowledge requirements.
- 4) To prepare the new entrants for the intellectual challenges of a university education.

#### I. Matrices

Introduction of matrices - Types of matrices -Operations on matrices.

Properties of matrices – Applications of matrices -Determinants - Relation between matrices and determinants - Properties of determinants.

#### II. Differential Calculus

Limits and continuity - Concepts of continuity - Derivatives of a function - Differentiation rules - Derivatives of trigonometric function.

Chain rule - Techniques of differentiation - Total and partial derivatives.

#### III. Integral calculus

Introduction of Indefinite and definite integrals- Properties of Indefinite and Definite Integrals-Proper and improper integrals-Applications of integration  
Integration by Substitution - Integration by Parts - Integration by Partial Fraction

#### IV. Differential Equations

ODE - PDE - Applications of ODE & PDE - Formation of ODE & PDE.

Order - Degree of differential equations-Applications of Differential equation

Linear & nonlinear - Homogeneous & non homogeneous equations.

#### Bridge Course Outcome

Bridge course helps students to get basic knowledge and to learn the curriculum of the present class in this academic year.

It would enable the students to grasp the concepts of mathematics quickly and efficiently.

During this interaction of few days with the faculty, the students will come out of their hesitation and it will be the best platform for the students to interact with the faculty members, making it responsible for them to build strong relationships with faculty and other students.

Also Bridge course gives them a breather, to prepare themselves before the onset of courses for first year degree program

## DEPARTMENT OF BACHELOR OF VOCATION (B.VOC)

### HARDWARE TECHNOLOGY AND NETWORKING

**Introduction:** This course will help the students become Field Technician (Computing and Peripherals) and Hardware and Network Engineers/Administrator who are employed in software, hardware and networking servicing firms like telecom companies and equipment manufacturing firms. This course will give hand on training to the student considering that student gets an early platform to manage and figure out the complex failures of computer hardware and network and also manage to find a solution to make it work properly. The curriculum includes general education and skill development components having extensive practical and on-the job training along with periodic industrial visits and industry interactions.

#### Objectives of the Course:

1. Study the basic network and terminology of the computer networking and enumerate the layers of system computer.
2. The application of open system interconnection network system paradigms and protocols implemented services.
3. The knowledge of Network layer and services managing to generation routing protocols and IP addressing.
4. The course aims at considering gets an early platform to manage and figure out the complex failures of computer hardware and network and also manage to find a solution to make it work properly

**Duration:** One week

**Contact Hours:** Two hours per day

**Subjects:** Relevant subjects of 1<sup>st</sup> year

#### Syllabus:

##### Unit-1:

- Computer Fundamentals: Characteristics and Classification of computer, Generation of computer, Functional Block Diagram of Computer
- Input and Output Devices, Monitor, BIOS, POST
- Booting, how system starts its day.

##### Unit-2:

- Memory Management: Memory Static & dynamic, RAM, ROM, PROM, EPROM, EEPROM, flash and Cache.
- Storage Devices: Hard Disk, its working physical and logical techniques, Zip Disk and Optical Disk. Pen Drive, Blue Ray.

- File systems FAT, NTFS, Types of Files, Organization of Files, Data Processing. Factors affecting File Organization, Partition, Format concept and its practical implementation.
- Number system- Binary, Octal, Hexadecimal, their Conversions.
- **Unit-3**
- Input and output Devices: Mother Board, Study of different inputs, connectors, slots & cables.
- Computer form factors of M.B. Computer.
- Hardware and Software Various types of Peripherals and their specifications.
- CD-ROM Drive, Zip Drive, MODEMS, Ethernet Card, printers working (Inkjet & Laser) and installation.

#### Unit-4

- Operating System: Types and Functions, DOS Introduction, Versions, DOS Commands.
- Internal, External, Root Directory.
- Windows Introduction, Working with desktop, Control Panel settings.

**Methodology:** The methodology adopted for teaching the course are as follows:

- Reference books
- Power Point Presentation
- Practical with respect to company
- Online Site visits
- Guest lecturers from eminent personalities of the industry

**Conclusion:** B. Voc in Hardware Technology and Networking is a skilled orientated course which focuses on overall development of the students with respect to practical as well as theoretical knowledge. It helps the students to learn about recent practices and work culture in the industry. This course also increases the employability of the students being a technical course.

## BUILDING TECHNOLOGY

**Introduction:** Construction activity is an integral part of nation's infrastructure and industrial development. Construction industry is vital in socio-economic development and also generates substantial employment and provides a growth impetus to other sectors through backward and forward linkages. Building technology deals with design, construction and maintenance of hospitals, schools, townships, offices, houses and other buildings. Requirement of skilled personnel/technicians in construction engineering works is growing day by day. Construction industries, public and private entrepreneurs, government organizations, builders, real estate owners are in need of technicians in this area. Hence this course has various advantages that will enable student to get engaged in any civil engineering work area.

### Objectives of the Course:

1. The B. Voc in Building technology aims at providing the expertise needed to effectively lead a construction project and work in industry.
2. It aims at providing over all technical proficiency, the industrial working exposure and the entrepreneurial skills for success in this everlasting industry.
3. The curriculum teaches you how to integrate multiple professional requirements for bringing construction projects to successful completion, including building construction, planning and drafting, estimating, cost control, new technologies etc.
4. The course aims at managing various types of contractual relationships governing the owner, the contractors, sub-contractors, consultants and architects as well as essential skills of bidding, negotiating handling disputes and claims.
5. To train students to gear up for employment opportunities in construction industry in private and public sector, state and central PWD, government undertakings, self-employment ventures/civil engineering contractors etc.

**Duration:** One week

**Contact Hours:** Two hours per day

**Subjects:** Relevant subjects of 1<sup>st</sup> year

### Syllabus:

#### Unit-1

- General Introduction of civil engineering: Various disciplines of civil engineering, Relevance of civil engineering in the overall infrastructural development of the country.
- Introduction to various types of buildings as per NBC
- Components of residential building and their functions

## Unit-2

- Building Planning: Introduction to planning of a residential building, site plan, orientation of a building, Position of building, position of doors and windows, size of rooms, preparation of a scaled sketch of the plan of a single storeyed residential building.

## Unit-3

- Building materials: Brick, cement blocks, properties and specifications
- Cement-OPC properties, types of cement and its uses
- Cement mortar- Constituents, Preparation
- Concrete- PCC and RCC, grades
- Steel- Use of steel in building construction, types of steel , grades and market forms

## Unit-4

- Building construction: Foundations, Function of foundations, types of foundations
- Brick Masonry
- Roofs- Functions, types, roofing materials
- Floors- Function, types, flooring materials
- Paints & Paintings- Function, types, painting materials

## Unit-5

- Basic units and conversions in civil engineering
- Introduction to various temporary structures in building construction
- Types of temporary structures
- Functions of temporary structures

**Methodology** The methodology adopted for teaching the course are as follows:

- Reference books
- Power Point Presentation
- Practical with respect to industries
- Site visits
- Guest lectures from eminent personalities of the industry

**Conclusion-** B.Voc in building Technology is a skilled orientated course which focuses on overall development of the students with respect to practical as well as theoretical knowledge. It helps the students to learn about recent practices and work culture in the industry. This course also increases the employability of the students being a technical course.

## SOFT SKILL

### Introduction

About the computer fundamental and the basics of the computer, its various hardware, software.

### Objectives

- To Study the basic awareness of computer
- To Study about the programming skill

Duration – One week

Contact Hours – as per the schedule (Time Table)

Beneficiaries –B. Voc-Software Development

Subject – Relevant Subjects of First Year- Computer Fundamental, C-Programming

### Syllabus

**Unit -1** Basics of Computer, Block Diagram of Computer

**Unit -2** Input Devices, Output Devices

**Unit -3** DOS

**Unit -4** C- Programming Languages Basics

### Methodology

Online Teaching, Online Practical's on Computer.

### Conclusion

Student will study all the basic of computer and basic of computer programming languages.