Janardan Bhagat Shikshan Prasarak Sansthas

CHANGU KANA THAKUR

Arts, Commerce and Science College, New Panvel (Autonomous)

Re-accredited 'A+' Grade by NAAC (3rd Cycle-CGPA 3.61)

'College with Potential for Excellence' Status Awarded by University Grants Commission

'Best College Award' by University of Mumbai

Academic Year 2022-23

List of Bridge Courses

Sr. No.	Name of the Course	Name of Department	Class
01	Bridge course in Chemistry	Chemistry	T.Y.B. Sc.
02	Bridge course in Computer Science	Computer Science	F.Y.B. Sc.
03	Bridge course in Microbial Studies	Microbiology	F.Y.B. Sc.
04	Bridge course in Microbial Techniques	Microbiology	T.Y.B. Sc.
05	Bridge Course in Mathematics and Statistics for Biotechnology	Biotechnology	F.Y.B. Sc. Biotechnology
06	Bridge Course in Mathematical and Statistical Techniques	Mathematics	F.Y.B. Com.
07	Bridge Course in Geography	Geography	F.Y.B.A.
08	Bridge Course in Rural Development	Rural Development	F.Y.B.A.

C.K.T.A.C.S. College New Panvel AUTONOMOUS

Prof. (Dr.) S. K. Patil
Principal
Changu Kana Thakur
Arts, Commerce and Science College,
New Panvel (Autonomous)

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List of Remedial Courses

Sr. No.	Name of the Course	Name of Department	Class
01	Remedial Course in Economics	Economics	F.Y.B.A.
02	Remedial Course in Commerce	Commerce	F.Y.B. Com.
03	Remedial Course in Financial Management	Accounting and Finance	F.Y.B. Com. (A&F)
04	Remedial Course Cost Accounting	Accounting and Finance	F.Y.B. Com. (A&F)
05	Remedial Course in Zoology	Zoology	F.Y.B. Sc.
06	Remedial Course in Mathematics	Mathematics	F.Y.B. Sc.
07	Remedial Course in Basic Physics	Physics	F.Y.B. Sc.
08	Remedial Course in Elementary Botany	Botany	F.Y.B. Sc.
09	Remedial Course in Biochemical Pathways	Microbiology	T.Y.B. Sc.

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Bridge Course in Chemistry

Introduction

This course is to refresh the basic concepts in Chemistry. It will help students to understand certain fundamental principles, largely having to do with structures. It can help immensely to reduce the complexity in various concepts in Chemistry. Bridge course will help the students to connect with the core subject and learn the skills which will make them confident and enhance their attitude to perform better.

Objectives

- To make the student familiar with the essential understanding of Chemistry.
- To solidify students basic practical skills used in Chemistry.
- To develop students approach in logical and systematic way, which make them enable the right study habits for mastering Chemistry.
- To demonstrate good laboratory practices among the students.

Eligibility:

All the students who have enrolled for T.Y.B. Sc. Chemistry course can opt for this bridge course.

Duration of the Course : 12 week (Three Months)

Number of Lectures: **Total**- 36 **Theory**- 24 **Practical-** 12

Course Content

Theory:

1) Physical Chemistry: 06 lectures
2) Inorganic Chemistry: 06 Lectures
3) Organic Chemistry: 06 Lectures
4) Analytical Chemistry: 06 Lectures

Practicals:

1) Physical Chemistry: 03 Lectures
2) Inorganic Chemistry: 03 Lectures
3) Organic Chemistry: 03 Lectures
4) Analytical Chemistry: 03 Lectures

Scheme of Examination

The scheme of examination is divided into theory papers, internal assessments and practical.

1) Internal Examination: There will be a continuous assessment of the students which includes assignments, class tests and presentations on the selected topics covered in the course. 20 marks are allotted for internal examination.

2) Course end examination: There will be 60 marks theory examination after the completion of the course. The question paper will be carrying 6 questions of 12 marks each. The students have to attempt any 5, but 1st question will be compulsory. The students will have to score at least 40% of the total marks to pass in the paper.

3) Practical Examination: The students will be tested for their practical skills by the examination. The examination will be of 20 marks.

Draft of Syllabus

Physical Chemistry

Theory

I) Thermodynamics **1 Lecture**

System, Types of system- Open, closed, isolated, Reversible and irreversible processes, First law of thermodynamics, Internal energy, Enthalpy, Second law of thermodynamics, Entropy, Free energy

II) Molecular Spectroscopy **1 Lecture**

Electromagnetic radiations, Wavelength, Frequency, Wave number, Quantization of energy, Electromagnetic spectrum, Absorption, Emission, Scattering, Fluorescence, Energies associated with molecule, Beer-Lamberts law

III) Electrochemistry **1 Lecture**

Electrochemical cell, Types of electrochemical cell, Daniell cell, Representation of cell, Types of reversible electrodes, Reference electrodes, Nernst's equation

IV) Nuclear Chemistry **1 Lecture**

Radioactivity, Radioactive element, Alpha, beta and gamma radiations, Properties of alpha, beta and gamma radiations, Radioactive decay

V) Chemical Kinetics **1 Lecture**

Definition of chemical kinetics, Scope of chemical kinetics, Rate of reaction Order of reaction, Molecularity of reaction, Zero order reaction, First order reaction, second order reaction

V) Solid state chemistry **1 Lecture**

Amorphous and crystalline solids, Symmetry in crystals, Simple cubic crystal, Face centred cubic crystal, Body centred cubic crystal

Practicals **3 Lecture**

I) Solutions: Preparation, Dilution

II) Instruments: Introduction to instruments, Handling of instruments, Calibration of instruments

III) Electrodes: Introduction to electrodes, Handling of electrodes

IV) Graphical representation: Equations of straight line, plotting of graph, Slope, Intercept

V) Scientific calculator: Use of scientific calculator, some mathematical solutions

Inorganic Chemistry

Theory

I) Classification of elements and periodic trends: 1 L

II) Chemical Bonding: 2 L
Different types of bond, valence bond theory (VBT), Molecular orbital theory (MOT), VSEPR Theory

III) Concept of Hybridization: **1 L**
Defination, Different types of hybridization

IV) Coordination Chemistry: 1 L
Bonding in coordination compounds, crystal field theory (CFT)

V) Chemistry of Transition elements: 1 L
Different Transition Series, properties of transition elements

Practicals **3L**

i) Gravimetric Analysis
ii) Volumetric Analysis

Organic Chemistry

Theory

I) Introduction to Organic Chemistry: **1 L**

Definition of Organic Chemistry, Source of Organic Compounds, comparison of organic compounds with inorganic compounds, Importance of organic compounds

II) Structure of Organic Molecules: **1 L**

Concept of bonding, Valency of carbon, Hybridization of carbon, Nitrogen and oxygen in organic compounds, Resonance concept, Drawing of resonance structures

III) Nomenclature of Organic Compounds: **1 L**

Types of Organic Compounds, Functional groups, Basic rules for IUPAC nomenclature, writing IUPAC names from structural formulas, writing structural formula from IUPAC names, common mistakes made by students in using IUPAC rules

IV) Stereochemistry of Organic Compounds: **1 L**

Structural Isomerism, Optical and Geometrical Isomerism, difference between configuration and conformation, Asymmetric carbon atom chiral carbon atom, Representation of configuration by wedge-dot formula and projection formula, inter conversion of the formulae

V) Organic Reactions and their Mechanism: **2 L**

Inductive effect, hyperconjugation, cabocations, carbanions, free radicals, Electrophiles and Nuclephiles, Types of organic reactions, Guidelines for writing of organic reaction mechanism with example of SN^1 & SN^2 reaction

Practicals

General Techniques of Separation and Purification **3 L**

Purification methods of organic compounds- Choice of the solvent, Filtration, Recrystallization, Distillation

Separation techniques- methods of separation of binary mixture (Solid + Solid, Solid + Liquid, Liquid + Liquid), Determination of Physical Constant- Melting point & Boiling point

Analytical Chemistry

Theory

(I) Introduction to Analytical Chemistry **2L**

Introduction, Scope and importance of analytical chemistry, Chemical Analysis, Application of analytical chemistry in various fields.

(II) Sampling **1 L**

Steps involved in chemical analysis-

i) Sampling
ii) Choice of analytical method
iii) actual analysis
iv) interpretation of results

(III) Analytical Methods **2L**

Classification of analytical methods

(IV) Figures of merits **1L**

Accuracy, Precision, Detection limit, Sensitivity, Selectivity

Practical **3L**

I) Standardization

A) Preparation of standard solution-

i) Primary standard
ii) Secondary standard

B) Standardization of solutions

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Revised Syllabus of Bridge Course in Computer Science

w.e.f. Academic Year 2022-23

Course Objectives: The students taking this bridge course shall be taught in foundational mathematics, fundamental concepts of algorithm. Able to understand the principles of computers.

Course Outcomes: After successful completion of this bridge course, the students shall be able to:

- Understand basic programming skills and develop algorithms for problem statement.
- Understand working of computer system and working of its components.
- Describe open-source principle and methodologies, case studies with real-life examples.
- Solve problems with help of mathematical and algorithmic structure used in computer science and computer applications.

Bridge Course Syllabus

Module - I	**Introduction to Computer System**	**6L**
	Fundamentals of computer: Types of Computers, Software and its types, Hardware **Fundamentals of algorithms:** Notion of an algorithm. Pseudo-code conventions like assignment statements and basic control structures. **Algorithmic problems:** Develop fundamental algorithms for (i) Exchange the values of two variables with and without temporary variable, (ii) Counting positive numbers from a set of integers, (iii) Summation of set of numbers, (iv) Reversing the digits of an integer, (v) Find smallest positive divisor of an integer other than 1 **Analysis of algorithms:** Running time of an algorithm, worst and average case analysis **Foundational Mathematics:** Types of numbers and their properties, natural numbers, whole numbers, integers, real numbers, rational numbers, irrational numbers, complex numbers, imaginary numbers. **Wired and Wireless** :1G, 2G, 3G, 4G mobile technology	
Module - II	**Languages and Technologies in Computer Science**	**4L**
	Languages: Higher level and Lower level, Compiler, Interpreter. Python, C, C++, Java, Vb.NET. Current trends in Computer Science eg ML, AI etc. **Multimedia:** You tube, explore features with options, Upload and download video on you tube. Different options in you tube, Upload and download videos using mobile.	
Module - III	**Free and Open-Source Software**	**5L**
	Open-source history, free Software vs Open Source, , What is License, Important FOSS License(Apache, BSD, GPL, LGPL) , Shared Software	

	Apache web server, GNU/ Linux, Android, Mozilla, Wikipedia, Drupal, wordpress, GCC, github, interacting with community on github, testing open-source code, reporting issues, contributing code Open-Source Hardware, open-Source database technologies, virtualization technologies	

1. Examination Pattern for Bridge Course in Computer Science

2. Theory Paper:

Question 1	Multiple Choice Questions	20 marks

3. Grading System:

A Grade	Above 75%
B Grade	60-74%
C Grade	40-59%

Changu Kana Thakur Arts, Commerce and Science College, New Panvel (Autonomous) (21-22)

Bridge Course in Microbial Techniques	[10]
1 Techniques in Plant Tissue Culture i. Preparation of Plant tissue culture media ii. Callus culture using suitable explants of medicinal plant	**[02]**
2 Techniques in Microbial Genetics i. Transformation and Conjugation ii. Phage Assay	**[02]**
3 Techniques in Immunology and Medical Microbiology i. Coomb's Test and Reverse Typing ii. ELISA iii. WIDAL & VDRL	**[02]**
4 Techniques in Microbial Biochemistry i. Estimation of Phenol, Proteins, Uric Acid ii. Estimation of Penicillin iii. β-Galactosidase assay	**[02]**
5 Techniques in Bioprocess Technology i. Bioassay of Vitamin B_{12} & Penicillin ii. Production of invertase by immobilized yeast cells	**[02]**

Books and References:

1. Singh Yogesh Kumar, Research Methodology, New Age International Pvt. Ltd. Publisher, New Delhi
2. Trun, Trempy, "Fundamental Bacterial Genetics", Blackwell Publishing
3. Anantnarayan & Paniker, Textbook of Microbiology, edtn 10th , 2017, University press
4. Jayaraman J., Laboratory Manual in Biochemistry.
5. Modi H.A., Fermentation Technology-2, 2009, Pointer Publication, India
6. Casida L.E., Industrial Microbiology, 2009, Reprint, New Age International Pvt. Ltd. Publisher, New Delhi
7. Smith R H (2012) Plant tissue culture: techniques and experiments Academic Press; 3rd Ed

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Program: Bridge Course in Microbial Techniques

Revised Syllabus of Bridge Course in Microbial Techniques

for T.Y.B.Sc. Microbiology

w.e.f. Academic Year 2019-20

Bridge Course in Microbial Techniques Syllabus for T.Y.B.Sc Microbiology

Sr. No.	Heading	Particulars
1	Title of Course	Bridge Course In Microbial Techniques
2	Eligibility for Admission	Sudents enrolled for T.Y.B.Sc.
3	Passing marks	40%
4	Ordinances/Regulations (if any)	-
5	Duration	10hrs
6	Level	U.G.
7	Pattern	-
8	Status	New
9	To be implemented from Academic year	2019-2020

Preamble of the Syllabus:

This course is designed for T.Y.B.Sc. Microbiology learners, to be completed in ten hours. On the successful completion, learners will be awarded with certificate of course. The topics prescribed in the syllabus mainly emphasis on basic aspects of microbiological practicals such as preparation of solutions, representation of data and reporting of observations, results and conclusion. In the later section of syllabus, some important techniques in Microbial Genetics, Medical Microbiology and Immunology, Biochemistry and Bioprocess technology will be taught to augment the theorotical aspects related to those different techniques. This course will be helpful to make student skillful by providing the different aspects of various bioassays. From this course, learners will enhance their technical as well as practical writing skills. This course will encourage the learners to get enrolled for post graduation and post graduate diploma and or other courses in Microbial techniques, Instrumentation, Bioanalytical Sciences etc.

Objectives of the Course:

- To enhance the learner's practicals skills and practical data compilation and it's representation.
- To enhance the learner's skills about important techniques in Microbiology.

Course Outcome: By the end of the course:

- Learners will get more knowledge of Microbial techniques and it will also be useful to work smoothly on various practicals in the Microbiology. It will promote the learners towards bioanalytical techniques as well as inculcate practical skills into them.

Bridge Course in Microbial Techniques:

For this course there shall be only one paper for 10 lectures comprising of five modules of two lectures each.

1. **Module-I: Introduction to Basic Techniques**
2. **Module-II: Techniques in Microbial Genetics**
3. **Module-III: Techniques in Immunology and Medical Microbiology**
4. **Module-IV: Techniques in Microbial Biochemistry**
5. **Module-V: Techniques in Bioprocess Technology**

Scheme of Examination:

Examination: 20 Marks will be as follows -:

Question 1	Objectives Questions with options: MCQs, Fill in the Blanks, Match the pairs, Definitions/Concepts. (Any 20 out of 30)	20 Marks

Bridge course in Microbial Techniques:
For T.Y.B.Sc Microbiology
Detailed Syllabus
To be implemented from the Academic year 2019-20

Bridge Course in Microbial Techniques	**[10]**
6 Introduction to Basic Techniques i. Preparation of Normal , Molar Solutions ii. Data Representation: Writing observations and Graphs Plotting iii. Interpretation of results and conclusion	**[02]**
7 Techniques in Microbial Genetics i. Transformation and Conjugation ii. Phage Assay	**[02]**
8 Techniques in Immunology and Medical Microbiology i. Coomb's Test and Reverse Typing ii. ELISA iii. WIDAL & VDRL	**[02]**
9 Techniques in Microbial Biochemistry i. Estimation of Phenol, Proteins, Uric Acid ii. Estimation of Penicillin iii. β-Galactosidase assay	**[02]**
10 Techniques in Bioprocess Technology i. Bioassay of Vitamin B_{12} & Penicillin ii. Production of invertase by immobilized yeast cells	**[02]**

Books and References:

1. Prescott L.M., Harley J.P.and Klein D.A., Microbiology, 5th Edition, October-2002, The McGraw−Hill Companies, 2002.
2. Stanier R.Y., General Microbiology, 5th Edition, 1987, Macmillan Press Ltd.
3. Pelczar, Elementary Microbiology, McGraw−Hill Companies

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Revised syllabus of

Program: Bridge Course in Mathematics and Statistics for Biotechnology

(w.e.f. the Academic Year 2019-2020)

Bridge Course in Mathematics and Statistics for Biotechnology

Eligibility: prerequisite course for Students without Mathematics at XI & XII standard
Duration: 15Hrs. (One Academic Year)
Fee:
Seats: As per demand of the students

Infrastructure Requirements:

- Well Equipped Lecture room
- Well Equipped Laboratory
- Library with relevant books
- LCD Projector

Staff Requirement:

- A coordinator who will be responsible for the smooth conduct of the course.
- Coordinator of the course may be paid an Honorarium of Rs.1000/- per year
- A lecture and practical can be conducted by the core faculty or visiting having expertise in concerned field. Guest Faculty/internal Faculty may be remunerated @ Rs.200/- per lecture of 1 hr. Duration.
- Faculty must possess at least a Bachelor Degree with a expertise respective filed.
- Faculty from industry and research institutes.

Theory Question Paper Pattern:

Question 1	Objectives Questions with options	20 marks

Course content:

Course Name	Theory Hours
Bridge Course in Mathematics and Statistics	15Hrs

Bridge Course in Mathematics and Statistics for Biotechnology

Unit	Unit name	Topics	Lectures /Hrs
1	**Review of algebra**	1. Arithmetic and geometric progressions. 2. Logarithm 3. Polynominal Equations, Rational roots 4. Functions: The Exponential Function, ax and logx 5. Exponential growth and Decay. 6. Graphs of Functions 7. Linear equations 8. Quadratic Functions and equations 9. Sequences	**6**
2	**Calculus**	Differential calculus (limits, derivatives), integral calculus (integrals, sequences and series *etc*.).	**5**
2	**Preliminary :Descriptive statistics**	1. Introduction 2. Frequency Tables, Histograms 3. Measures of Central tendency : Mean and Median 4. Measures of Dispersion: Variance and Standard deviation.	**2**
3	**Basic Probability**	1. Introduction: Sample Space and Events 2. Axioms of Probability and simple examples	**2**

REFERENCE:

1. SCHAUM'S outline of Theory and Problems of College Mathematics 3rd edition, by Philip. A Schmidt and Frank Ayres, Tata McGraw Hill publication/Chapters 2, 3, 4, 5, 12, 39, 41, 45, 46, 48.
2. SCHAUM'S outline of theory and Problems of Introduction to Probability and Statistics by Seymour Lipschutz and john J. Schiller. Tata McGraw Hill publishing Ltd. Chapters 1.1, 1.2, 1.3, 1.4, 3.1, 3.2, 3.3, 3.4.
3. THOMAS CALCULUS 11th edition , by George B Thomas Maurice D. Weir, joel Hass, Frank R. Giordanor, Pearson Addison Wesley 1.3, 2.1, 2.2, 3.1, 3.2, 3.3, 5.3, 7.3, 7.4, 7.5, 8.1, 11.1.
4. Calculus & Analytical Geometry Thomas & Finney.

Evaluation System:

Sr. No	Exam No.	Name of the Students	Theory	Percentage %	Remarks	Grade
		Maximum Marks	50			
		Minimum Marks	17			
		Obtained Marks				

Slandered of Passing: 40%

Grading System:

A Grade **Above 75%**

B Grade **60-74%**

C Grade **40-59%**

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Program: B.Com.

Revised Syllabus of F.Y.B.Com. : Basic Course in Mathematics & Statistics
Choice Based Credit System
w.e.f. Academic Year 2022-23

Sr. No.	Heading	Particulars
1	Title of Course	Basic Course in Mathematics & Statistics
2	Eligibility for Admission	12^{th} Science & Commerce of all recognised Board
3	Passing marks	40%
4	Ordinances/Regulations (if any)	
5	No. of Semesters	One
6	Level	U.G.
7	Pattern	Semester
8	Status	Revised
9	To be implemented from Academic year	2022-2023

F.Y.B.Com.

Preamble:

Mathematical thinking is important for all members of a modern society as a habit of mind for its use in the workplace, business and finance and for personal decision making. Mathematics is fundamental to national prosperity in providing tools for understanding Science, Engineering, Technology and Economics. It is essential in public decision making and for participation in the knowledge economy. Mathematics is a creative discipline.

Objectives:

1. To introduce the basic concepts of Mathematics and Statistics.
2. To increase the learners appreciation of the basic role played by Mathematics in modern technology.
3. To prepare learners to face challenges of privatization and globalization by providing basic knowledge and skill of Mathematics and Statistics.
4. To bridge the gap between commerce and higher Mathematics.

Learning Outcomes:

This course will help students to learn about the basic concept relating Mathematics and Statistics , Calculus, Measures of central tendencies, Dispersion, sources of data, classification of data, Probability, etc. It will further help to apply the statistical tools and techniques for decision making and for research studies.

Syllabus for Basic Course in Mathematics & Statistics

Basic Course in Mathematics & Statistics

Course Outcomes

After completing the course, Student will be able to:	
CO1	**Make use of** the basic concepts of mathematics and statistics.
CO2	**Define** the function, types of functions and derivatives.
CO3	**Apply** Summarization Measures to solve the examples.
CO4	**Determine** the probability

Syllabus

Unit-I	Introduction to Mathematics and Statistics, Mathematics and you, Ratio and proportion, Percentage, Profit and Loss, Partnership and Discount.
Unit -II	Arithmetic and Geometric Progression, Functions: constant function, linear function, demand and supply function, total revenue function, total cost and profit function and their applications. Quadratic functions and equations
Unit- III	Introduction to Calculus: Rate of Change and Limits, Derivatives as a Rate of Change, Derivatives of function: Constant function, x^n, e^x, a^x, logx, Differentiation rules: Scalar multiplication, addition, subtraction, product and quotient, simple examples.
Unit -IV	Preliminary: Descriptive Statistics: Introduction, Frequency Tables, Histograms, Measures of Central Tendency: Mean and Median, Measures of Dispersion: Variance and Standard deviation.
Unit-V	Basic Probability: Introduction, Sample space and events, Axioms of Probability and simple examples.

Reference Books

Mathematical and Statistical Techniques

- *Mathematics for Economics and Finance Methods and Modelling by Martin Anthony and Norman Biggs, Cambridge University Press, Cambridge low-priced edition, 2000, Chapters 1, 2, 4, 6 to 9 & 10.*
- *Applied Calculus: By Stephen Waner and Steven Constenoble, Brooks/Cole Thomson Learning, second edition, Chapter 1 to 5.*
- *Mathematics for Business Economics: By J. D. Gupta, P. K. Gupta and Man Mohan, Tata Mc-Graw Hill Publishing Co. Ltd., 1987, Chapters 9 to 11 & 16.*
- *STATISTICS by Schaum Series.*
- *Operations Research by Gupta and Kapoor*
- *Fundamentals of Statistics - D. N. Elhance.*
- *Statistical Methods - S.G. Gupta (S. Chand & Co.*
- *Business Mathematics & Statistics: B Aggarwal, Ane Book Pvt. Limited*
- *Business Mathematics: A P Verma, Asian Books Pvt. :Limited.*
- SCHAUM'S outline of Theory and Problems of College Mathematics , 3rd edition, by Philip. A Schmidt and Frank Ayres, Tata McGraw Hill Publication.
- SCHAUM'S outline of Theory and Problems of Introduction to Probability and Statistics by Seymour Lipschutz and john J. Schiller: Tata MaGraw Hill Publishing Ltd.

J. B. S. P. Sansth'a

CHANGU KANA THAKUR ARTSCOMMERCE AND SCIENCE COLLEGE, NEW PANVEL (AUTONOMOUS)

Department of Geography

BRIDGE COURSE IN GEOGRAPHY

Couse Content

1. **Basic Concepts in Geography:**
   - 1.1 Definitions of Geography
   - 1.2 Branches of Geography
   - 1.3 Earthquake and Volcano
   - 1.4 Rock Formation
   - 1.5 Movement of Earth's Crust
   - 1.6 Weather and Climate
   - 1.7 Atmosphere
   - 1.8 Soil- Concept and Types

2. **Basic Concepts in Geography:**
   - 2.1 Location
   - 2.2 Map -Types
   - 2.3 Directions
   - 2.4 Scale
   - 2.5 Conventional Signs and Symbols
   - 2.6 Projections
   - 2.7 Map Sketching
   - 2.8 Map Reading

J B S P SANSTHAS

CHANGU KANA THAKUR A.C.S.COLLEGE, NEW PANVEL

Bridge Course in Rural Development

CLASS F Y B A 2022-23

COURSE CONTENT

- Concept of Rural development
- Nature and Scope of Rural development
- Objectives of Rural development
- Importance of Rural development
- Concept of Rural society
- Rural Administration
- Panchayat Raj System in Maharashtra

J. B. S. P. Sansth'a
CHANGU KANA THAKUR ARTS COMMERCE AND SCIENCE COLLEGE, NEW PANVEL (AUTONOMOUS)

Department of Economics

REMEDIAL COURSE IN ECONOMICS

Course Content

1. Basic Concepts in Economics:

1.1 Definitions of Economics
1.2 Introduction to Branches of Economics
1.3 Demand and Supply
1.4 Production Cost and Revenue
1.5 Market
1.6 Price Determination
1.7 Meaning of Micro Economics
1.8 Concept of Consumer Behavior
1.9 Firm
1.10 Perfect Competition

Dr. B. S. Patil
BOS Chairman
Department of Economics
UG and PG

Principal
C.K.T.A.C.S. College,
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Remedial Course in Commerce

Department of Commerce

Syllabus for Remedial Course

Class: F.Y.B.Com **Year : 2022-23**

Subject: Commerce I **Semester: I**

Sr. No	Modules
1.	**Business and Business Environment** Introduction to business, Business objective. Business environment, Constituents of business environment, Meaning of international environment, Importance of International Environment.
2.	**Project Planning** Business planning process, Importance of project planning Business unit promotion, Factors determining location.
3.	**Entrepreneurship** Concept and importance of entrepreneurship, Types of Entrepreneur, Women Entrepreneur.
4.	**New Trends in Business Strategy** Concept of Liberalization, Privatization, Globalization, Concept of Corporate Social Responsibility.

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Remedial Course in Commerce

Department of Commerce

Syllabus for Remedial Course

Class: F.Y.B.Com **Year: 2022-23**

Subject: Commerce II **Semester: II**

Sr. No	Modules
1.	**Concept of services** Meaning of service, Classification of service Service marketing.
2.	**Retailing** Concept of organized and unorganized retailing, Store format and non store format, Mall management, franchising.
3.	**Recent trends in service sector** ITES sector (BPO, KPO, LPO and ERP) E-payment, Online banking Logistics
4.	**E-commerce** Meaning and features of e-commerce, Types of E-commerce World wide web.

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Remedial Course in Commerce

Sr. No	Particulars	Details
1.	Name of the department	Commerce
2.	Class	F.Y.B.Com
3.	Title of Remedial Course	Remedial course in Commerce
4.	Year of Commencement	2022-23
5.	No. of Students Enrolled	26

Head of Department	Teacher Incharge	Principal
Prof. Dr. Elizabeth Mathews	Kirti V. Varma	Prof. Dr. S.K. Patil

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL

(Autonomous)

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'College with Potential for Excellence' Status Awarded by University Grants Commission

'Best College Award' by University of Mumbai

Remedial Course List
F.Y. B. Com. Division A
Remedial Students

Sr. No	Roll No	Score	Name
1.	17	07/20	Anshu Prabhakar Shukla
2.	132	07/20	Ruksana Zinkan Shaikh
3.	47	10/20	Disha Pravin Phadke
4.	51	10/20	Gitanjali Sandip Tupe
5.	56	10/20	Harshali Kiran Bhagat
6.	68	10/20	Kashish Prashant Gaikar
7.	82	10/20	Mayuri Sukhdev Chavan
8.	103	10/20	Prachi Kishor Bhagat
9.	118	10/20	Pravin Dhanaram kumavat
10.	123	10/20	Rahul Ashokumar Rajbhar
11.	138	10/20	Sakshi Anil Gaikwad
12.	30	10/20	Asmita Dattaraya Ithape
13.	83	10/20	Mayuri Sunil Thakur
14.	01	10/20	Aarti Dilip Jadhav

Head of Department
Elizabeth Mathews

Teacher Incharge
Kirti V. Varma

Principal Prof. Dr.
Prof. Dr. S.K. Patil

Janardan Bhagat Shikshan Prasarak Sanstha's

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Remedial Course List
F.Y. B. Com. Division B
Remedial Students

Sr. No	Roll No	Score	Name
15.	155	06/20	Mukta Mahadev Devkamble
16.	216	08/20	Tanu Prajapati
17.	157	09/20	Nikhil Ajay Jadhav
18.	218	09/20	Tanushree Dilip Mahajan
19.	256	09/20	Dipali Santosh Jadhav
20.	278	09/20	Manali Manohar Revashkar
21.	281	09/20	Bhumi Prabhakar Kamble
22.	241	10/20	Haresh Dilip Vak
23.	247	10/20	Abhay Pritam Ghave
24.	259	10/20	Sanika Baban Shinde
25.	282	10/20	Ishwari Girish Shinde
26.	124	10/20	Rajaswani Gurunath Patil

Head of Department
Prof. Dr. Elizabeth Mathews

Teacher Incharge
Kirti V. Varma

Principal
Prof. Dr. S.K. Patil

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Remedial Course in Commerce

This is to inform you that the Remedial Course Exam for the Subject of Commerce II is scheduled (40 Marks) on 21st March 2023 at 10.00 am to 11.30 am in room no 120. All remedial students should compulsorily attend the examination.

Kirti V. Varma
Teacher Incharge

Prof. Dr. Elizabeth Mathews
Head of the Department

Janardan Bhagat Shikshan Prasarak Sanstha's

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Remedial Course in Commerce Marksheet

DATE: 07th September, 2022

Sr. No	Roll No	Name	Score	Score	Total	Grade
1	17	Anshu Prabhakar Shukla		10		
2	132	Ruksana Zinkan Shaikh				
3	47	Disha Pravin Phadke		11		
4	51	Gitanjali Sandip Tupe		09		
5	56	Harshali Kiran Bhagat		10		
6	68	Kashish Prashant Gaikar				
7	82	Mayuri Sukhdev Chavan		09		
8	103	Prachi Kishor Bhagat		10		
9	118	Pravin Dhanaram kumavat		10		
10	123	Rahul Ashokumar Rajbhar		07		
11	138	Sakshi Anil Gaikwad		12		
12	30	Asmita Dattaraya Ithape		09		
13	83	Mayuri Sunil Thakur		07		
14	01	Aarti Dilip Jadhav		11		

15	155	Mukta Mahadev Devkamble		**07**		
16	216	Tanu Prajapati		**12**		
17	157	Nikhil Ajay Jadhav		**11**		
18	218	Tanushree Dilip Mahajan		**09**		
19	256	Dipali Santosh Jadhav				
20	278	Manali Manohar Revashkar		**12**		
21	281	Bhumi Prabhakar Kamble				
22	241	Haresh Dilip Vak		**09**		
23	247	Abhay Pritam Ghave		**07**		
24	259	Sanika Baban Shinde		**12**		
25	282	Ishwari Girish Shinde		**13**		
26	124	Rajaswani Gurunath Patil		**05**		
27	48	Fauziya Bashir Shaikh		**12**		

To do

Summary sheet given by mathew ma'am

Google sheet question paper

Student list

Foot note

HOD TEACHER INCHARGE PRINCIPAL

Business

Business is any economic activity that includes the purchase or sale of goods or services with the basic objective of earning profit and satisfying the individuals' needs of the society. Business activities can be classified into two categories: Industry and Commerce.

Industry

An industry is a group of companies that are related based on their primary business activities. In modern economies, there are dozens of industry classifications. Industry classifications are typically grouped into larger categories called sectors.

Commerce

Commerce is the exchange of goods and services on a large scale. Any transaction that uses the money to purchase goods or services is a part of the Commerce.

E- Commerce

In the twenty-first century, electronic Commerce has been added to the idea of trade. E-commerce makes it easy for customers to trade money for goods and services. It is faster and more convenient than traditional commerce. E-commerce allows seamless transactions online and delivery of goods via courier services.

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Remedial Course in Commerce

Department of Commerce

Q1. Define services and explain its characteristics.

Q2. Distinguish between organised and unorganised retailing.

Q3. Explain logistics and state the importance of logistics.

Q4. Discuss the functions of E-commerce.

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Remedial Course in Commerce Marksheet

Date: 17th August, 2023.
Total Marks: 40

Sr. No	Roll No	Name	Score Ass	Score Test	Total
1	17	Anshu Prabhakar Shukla	09	11	20
2	132	Ruksana Zinkan Shaikh	10	12	22
3	47	Disha Pravin Phadke	09	10	19
4	51	Gitanjali Sandip Tupe	08	08	16
5	56	Harshali Kiran Bhagat	07	09	16
6	68	Kashish Prashant Gaikar	05	03	08
7	82	Mayuri Sukhdev Chavan	05	09	14
8	103	Prachi Kishor Bhagat	06	10	16
9	118	Pravin Dhanaram kumavat	07	10	17
10	123	Rahul Ashokumar Rajbhar	12	06	18
11	138	Sakshi Anil Gaikwad	09	11	20
12	30	Asmita Dattaraya Ithape	08	05	13
13	83	Mayuri Sunil Thakur	06	07	11
14	01	Aarti Dilip Jadhav	05	09	14
15	155	Mukta Mahadev Devkamble	03	07	10

16	216	Tanu Prajapati	**09**	**11**	**20**
17	157	Nikhil Ajay Jadhav	**11**	**11**	**22**
18	218	Tanushree Dilip Mahajan	**06**	**05**	**11**
19	278	Manali Manohar Revashkar	**10**	**10**	**20**
20	281	Bhumi Prabhakar Kamble	**06**	**AB**	**06**
21	241	Haresh Dilip Vak	**09**	**05**	**14**
22	247	Abhay Pritam Ghave	**07**	**03**	**10**
23	259	Sanika Baban Shinde	**12**	**09**	**21**
24	282	Ishwari Girish Shinde	**13**	**12**	**25**
25	124	Rajaswani Gurunath Patil	**05**	**05**	**10**
26	48	Fauziya Bashir Shaikh	**12**	**09**	**21**

Kirti V. Varma
Teacher Incharge

Prof. Dr. Elizabeth Mathews
Head of the Department

Janardan Bhagat Shikshan Prasarak Sanstha's
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Department of Accounting & Finance

Board of Studies in Accounting & Finance

Course: Remedial Course in Cost Accounting

Remedial Course in Cost Accounting Syllabus

To be implemented from the Academic year 2022-2023

Remedial course in Cost Accounting

1	Preamble of the syllabus
	Remedial course in Cost Accounting is a remedial Course of Department of Accounting & Finance, Changu Kana Thakur Arts, Commerce & Science College, New Panvel (Autonomous) affiliated to University of Mumbai (MH). The learners pursuing Remedial course in Cost Accounting. This course is used to help learners to improve their key academic Cost Accounting skills including various aspects of cost accounting. This Remedial Course would have to develop understanding of various aspects of the Cost Accounting. It helps to ascertain costs and prepare Cost Sheets, also to evaluate the material procurement procedure, inventory control and inventory accounting. The performance of the learners shall be evaluated into two components i.e. internal examination and external examination. The learner's Performance shall be assessed by Internal Assessment with 40 marks and external assessment with 60 marks.

2	Objectives of the course
•	To ascertain costs and prepare Cost Sheets.
•	To evaluate the material procurement procedure, inventory control and inventory accounting.
•	To Prepare the attendance, payroll procedures, calculation of remuneration and incentive plans in preparation of labour cost statement.
•	To analysis of overheads, allocation, absorption and apportionment of overheads.

3	Course Outcomes
	The students will be able to
•	classify various aspects of costs and prepare cost sheet.
•	explain the material procurement procedure, inventory control and inventory accounting.
•	determine the attendance, payroll procedures, calculation of remuneration and incentive plans in preparation of labour cost statement.
•	Distinguish various overheads, allocation, absorption and apportionment of overheads.

Remedial course in Cost Accounting

Modules at a Glance

Sr. No.	Modules	No. of Lectures
1	Introduction To Cost Accounting	06
2	Material Costing	08
3	Labour Costing	08
4	Overheads	08
Total		**30**

4. Detailed Syllabus

Sr. No.	Modules / Units	No. of Lectures
1	**Introduction To Cost Accounting**	**06**
	• Meaning & Definition of Costing, Cost Accounting & Cost Accountancy, Cost Concepts • Difference between Cost Accounting & Financial Accounting • Advantages & Disadvantages of Cost Accounting • Unit Costing • Classification of Costing • Types of Costs • Elements of Cost Sheets	
2	**Material Costing**	**08**
	• Procurement procedures—Store procedures and documentation in respect of receipts and issue of stock, Stock verification • Inventory control —Techniques of fixing of minimum, maximum and reorder levels, Economic Order Quantity, ABC classification; Stocktaking and perpetual inventory • Inventory accounting - Calculation of EOQ, Raw Material Turnover ratio.	
3	**Labour Costing**	**08**
	• Attendance and payroll procedures, Overview of statutory requirements, Overtime, Idle time and Incentives • Labour turnover • Utilisation of labour, Direct and indirect labour, charging of labour cost, Identifying labour hours with work orders.	
4	**Overheads**	**08**
	• Functional analysis — Factory, Administration, Selling and Distribution • Behavioral analysis — Fixed, Variable, semi variable cost • Departmentalization and apportionment of primary overheads, Computation of overhead rates including Machine overhead rates	

5) References Books

Remedial course in Cost Accounting
• *Lectures on Costing by Swaminathan: S. Chand and Company (P) Ltd., New Delhi* • *Cost Accounting by C.S. Rayudu, Tata Mc. Grow Hill and Co. Ltd., Mumbai* • *Cost Accounting by Jawahar Lal and Seema Srivastava, Tata Mc. Grow Hill and Co. Ltd., Mumbai* • *Cost Accounting by Ravi M. Kishore, Taxmann Ltd., New Delhi* • *Principles and Practices of Cost Accounting by N.K. Prasad, Book Syndicate Pvt. Ltd., Calcutta* • *Cost Accounting Theory and Practice by B.K. Bhar, Tata Mc. Grow Hill and Co. Ltd., Mumbai* • *Cost Accounting Principles and Practice by M.N. Arora, Vikas Publishing House Pvt. Ltd., New Delhi* • *Advanced Cost and Management Accounting: Problems and Solutions by V.K. Saxena and C.D.Vashist, S. Chand and Company (P) Ltd., New Delhi* • *Cost Accounting by S.P. Jain and K.L. Narang, Kalyani Publishers, Ludhiana* • *Modern Cost and Management Accounting by M. Hanif, Tata McGraw Hill Education Pvt. Ltd., NewDelhi*

Remedial Course in Cost Accounting
To be implemented from the Academic year 2022-2023

Scheme of Evaluation

The performance of the learners shall be evaluated into two components. The learner's Performance shall be assessed by Internal Assessment with 40% marks in the first component. External assessment with 60% marks in the second component. The allocation of marks for the Internal Assessment and Semester End Examinations are as shown below: -

A) Internal Assessment: 40 **%** **40 Marks**

Sr. No.	Particular	Marks
01	One periodical class test / online examination to be conducted in the given semester	20 Marks
02	Any two tools out of these (10 Marks each) 1. Group/ Individual Project 2. Presentation and write up on the selected topics of the subjects. 3. Case studies /Test based on Tutorials 4. Open Book Test/Book Review 5. Quiz	20 Marks

Question Paper Pattern
(Periodical Class Test/ online examination for the Courses at Under Graduate Programmes)

- Maximum Marks: 20
- Duration: 30 Minutes

Particular	Marks
Match the Column / Fill in the Blanks / Multiple Choice Questions/ True/False/Answer in One or Two Lines (Concept based Questions) (1 Marks each)	20 Marks

B) External Assessment: 60 % **60 Marks**

Question Paper Pattern

Theory question paper pattern
1. There shall be four questions each of 15 marks (30 marks with internal options). 2. All questions shall be compulsory with internal options. 3. Question may be subdivided into sub-questions a, b, c… and the allocation of marks depends on the weightage of the unit/module. 4. Duration: The examination shall be of 2 hours duration.

Passing Standard

The learners to pass a course shall have to obtain a minimum of 40% marks in aggregate for each course where the course consists of Internal Assessment and Semester End Examination. The learners shall obtain minimum of 40% marks (i.e., 16 out of 40) in the Internal Assessment and 40% marks in Semester End Examination (i.e., 24 Out of 60) separately, to pass the course and minimum of Grade E to pass a particular semester A learner will be said to have passed the course if the learner passes the Internal Assessment and Semester End Examination together.

****

Question Paper Pattern

Maximum Marks: 60
Questions to be set: 04
Duration: 2 Hrs.
All Questions are Compulsory Carrying 15 Marks each.

Question No	Particular	Marks
Q-1	Full Length Practical Question	15 Marks
	OR	
Q-1	Full Length Practical Question	15 Marks
Q-2	Full Length Practical Question	15 Marks
	OR	
Q-2	Full Length Practical Question	15 Marks
Q-3	Full Length Practical Question	15 Marks
	OR	
Q-3	Full Length Practical Question	15 Marks
Q-4	Full Length Question	15 Marks
	OR	
Q-4	Short Notes (Any three out of five)	15 Marks

Note:

Practical question of 15 marks may be divided into two sub questions of 7/8 and 10/5 Marks. If the topic demands, instead of practical questions, appropriate theory question may be asked.

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Department of Accounting & Finance

Board of Studies in Accounting & Finance

Remedial Course: Remedial course in Financial Management

Remedial course in Financial Management syllabus

To be implemented from the Academic year 2022-2023

Remedial course in Financial Management

1	Preamble of the syllabus
	Remedial course in Financial Management is a remedial Course of Department of Accounting & Finance, Changu Kana Thakur Arts, Commerce & Science College, New Panvel (Autonomous) affiliated to University of Mumbai (MH). The learners pursuing Remedial course in Financial Management will help learners to improve their key academic Financial Management skills including various aspects of Financial Management. This Remedial Course would have to develop understanding of various aspects of the Financial Management. It helps to understand the fundamental financial mathematics by computing simple and compound interest, Annuity and depreciation of Assets, also to explain the basic aspects of Financial Management and describe the types of financing. The performance of the learners shall be evaluated into two components i.e. internal examination and external examination. The learner's Performance shall be assessed by Internal Assessment with 40 marks and external assessment with 60 marks.

2	Objectives of the course
●	To explain the basic aspects of Financial Management and describe the types of financing.
●	To Compute time value of money and to know the concepts in valuation
●	To understand the fundamental financial mathematics by computing simple and compound interest, Annuity and depreciation of Assets.
●	To define and measure the cost of capital and calculate WACC

3	Course Outcomes
	The students will be able to
●	Explain the various aspects of Financial Management and to describe the sources of financing
●	Apply the techniques of valuation and calculate time value of money
●	Compute the fundamental financial mathematics by computing simple and compound interest, Annuity and depreciation of Assets.
●	Measure the cost of individual components of capital and to calculate WACC

Remedial course in Financial Management

Modules at a Glance

Sr. No.	Modules	No. of Lectures
1	Introduction to Financial Management	04
2	Time value of Money	06
3	Financial Mathematics	10
4	Cost of Capital	10
Total		**30**

4. Detailed Syllabus

Sr. No.	Modules / Units	No. of Lectures
1	**Introduction to Financial Management**	**04**
	● Introduction to Financial Management: Introduction, Meaning, Importance, Scope and Objectives of financial management, Role & Function of finance executives.	
2	**Time Value of Money**	**06**
	● The Time Value of Money, Present Value, Internal Rate of Return, Bonds Returns ● The Returns from Stocks, Annuity, Techniques of Discounting, Techniques of Compounding	
3	**Financial Mathematics**	**10**
	● Simple and Compound Interest: Interest compounded once a year, more than once a year, continuous, nominal and effective rate of interest ● Annuity-Present and future value-sinking funds Depreciation of Assets: Equated Monthly Installments (EMI)-using flat interest rate and reducing balance method.	
4	**Cost of Capital**	**10**
	● Measurement of Cost of Capital Calculate WACC, Marginal cost of capital and Effective interest rate, (Including Practical Problems)	
	Total	**30**

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5.References Books

Remedial course in Financial Management
● *Fundamentals of Financial Management by D. Chandra Bose, PHI Learning Pvt. Ltd., New Delhi* ● *Fundamentals of Financial Management by Bhabotosh Banerjee, PHI Learning Pvt. Ltd., New Delhi* ● *Fundamentals of Financial Management by Vyuptakesh Sharma, Pearson Education, New Delhi* ● *Fundamentals of Financial Management by J.C. Van Horne, Prentice Hall of India, New Delhi* ● *Financial Management: Text and Problems by M.Y. Khan and P.K. Jain, Tata McGraw Hill, New Delhi* ● *Financial Management: Theory and Practice by Prasanna Chandra, Tata McGraw Hill, New Delhi* ● *Financial Management by I.M. Pandey, Vikas Publishing House, New Delhi*

Remedial course in Financial Management

To be implemented from the Academic year 2022-2023

Scheme of Evaluation

The performance of the learners shall be evaluated into two components. The learner's Performance shall be assessed by Internal Assessment with 40% marks in the first component. External assessment with 60% marks in the second component. The allocation of marks for the Internal Assessment and Semester End Examinations are as shown below: -

A) Internal Assessment: 40 **%** **40 Marks**

Sr. No.	Particular	Marks
01	One periodical class test / online examination to be conducted in the given semester	20 Marks
02	Any two tools out of these (10 Marks each) 1. Group/ Individual Project 2. Presentation and write up on the selected topics of the subjects. 3. Case studies /Test based on Tutorials 4. Open Book Test/Book Review 5. Quiz	20 Marks

Question Paper Pattern

(Periodical Class Test/ online examination for the Courses at Under Graduate Programmes)

- Maximum Marks: 20
- Duration: 30 Minutes

Particular	Marks
Match the Column / Fill in the Blanks / Multiple Choice Questions/ True/False/Answer in One or Two Lines (Concept based Questions) (1 Marks each)	20 Marks

B) External Assessment: 60 % **60 Marks**

Question Paper Pattern

Theory question paper pattern
1. There shall be four questions each of 15 marks (30 marks with internal options). 2. All questions shall be compulsory with internal options. 3. Question may be subdivided into sub-questions a, b, c… and the allocation of marks depends on the weightage of the unit/module. 4. Duration: The examination shall be of 2 hours duration.

Passing Standard

The learners to pass a course shall have to obtain a minimum of 40% marks in aggregate for each course where the course consists of Internal Assessment and Semester End Examination. The learners shall obtain minimum of 40% marks (i.e., 16 out of 40) in the Internal Assessment and 40% marks in Semester End Examination (i.e., 24 Out of 60) separately, to pass the course and minimum of Grade E to pass a particular semester A learner will be said to have passed the course if the learner passes the Internal Assessment and Semester End Examination together.

****

Question Paper Pattern

Maximum Marks: 60
Questions to be set: 04
Duration: 2 Hrs.
All Questions are Compulsory Carrying 15 Marks each.

Question No	Particular	Marks
Q-1	Full Length Practical Question	15 Marks
	OR	
Q-1	Full Length Practical Question	15 Marks
Q-2	Full Length Practical Question	15 Marks
	OR	
Q-2	Full Length Practical Question	15 Marks
Q-3	Full Length Practical Question	15 Marks
	OR	
Q-3	Full Length Practical Question	15 Marks
Q-4	Full Length Question	15 Marks
	OR	
Q-4	Short Notes (Any three out of five)	15 Marks

Note: Practical question of 15 marks may be divided into two sub questions of 7/8 and 10/5 Marks. If the topic demands, instead of practical questions, appropriate theory question may be asked.

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Remedial course in Zoology

Remedial course Syllabus for Basic Zoology

Course Title: Introduction to Zoology

Course Description:

This course is designed to provide a foundational understanding of the principles and concepts in zoology. It covers the basic characteristics of animals, their diversity, physiology, and ecological roles. The course is suitable for students who need to strengthen their knowledge in zoology or those with little background in the subject.

1: Introduction to Zoology

- Definition and significance of zoology
- Overview of major branches in zoological studies
- Discussion on common misconceptions about animals

2: Animal Classification and Diversity

- Basis of animal classification
- Major phyla of the animal kingdom
- Evolutionary relationships among animals

3: Cell Biology and Tissues

- Basic principles of cell biology
- Animal tissues and their functions

4.: Reproduction and Development

- Life cycles of selected animals

5: Ecology and Behaviour

- Basics of animal behaviour
- Ecological roles of animals
- Interactions within ecosystems

6: Review and Assessment

Practice quizzes and assessments based on syllabus

Class participation and assignments (10%)

Note:

This syllabus is a guide, and adjustments may be made based on the progress of the class. Students are expected to actively participate in discussions and seek assistance when needed. Regular attendance and engagement are essential for success in this course.

J.B.S.P.SANSTHA'S

CHANGU KANA THAKUR ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL

Remedial Course in Mathematics for Science

First Semester

Syllabus

Unit-I	Set Theory, operation of sets, relation, functions, types of functions, composite functions, complex numbers, Limits and continuity
Unit -II	Binomial Theorem, Divisibility in integers, Fundamental theorem of Arithmetic, Euler's theorem, finite induction

Scheme of Evaluation:

The Scheme of Evaluation shall be conduct of 10 sessions of slow learners from F.Y. B.Sc. Class.

J.B.S.P. SANSTHA'S

CHANGU KANA THAKUR ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL

Remedial Course in Mathematics for Science

Second Semester

Syllabus

Unit-I	Sequence and series, Arithmetic progression and Geometric progression, Differentiability, Cartesian Co-ordinates and polar Co-ordinates
Unit -II	Counting and Equivalence Relation: Counting of set of pairs, Cartesian product, Sterling numbers, Bell number, Multinomial theorem

Scheme of Evaluation:

The Scheme of Evaluation shall be conduct of 10 sessions of slow learners from F.Y. B.Sc. Class.

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Program: B.Sc

Syllabus of Remedial course in Basic Physics
w.e.f. Academic Year 2019-20

Sr. No.	Heading	Particulars
1	Title of Course	Physics
2	Eligibility for Admission	12th Science of all recognised Board
3	Passing marks	40%
4	No. of Weeks	One
5	Level	U.G.
6	Status	Revised
7	To be implemented from Academic year	2019-2020

Syllabus of Remedial Course in Basic Physics

Class : F.Y.Bsc

1. Mechanics
2. Properties of Matter
3. Basics of Heat
4. Introduction of Optics
5. Electricity
6. Magnetism
7. Electronics
8. Atomic Physics
9. Nuclear Physics
10. Vector Algebra

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Remedial Course in Botany

'Elementary Botany'

(To be implemented from the academic year 2019-20)

Preamble of the syllabus

Revised syllabus for Remedial Course in Botany titled 'Elementary Botany' is meant to provide the slow and medium learners of F. Y. B. Sc. Botany with an effective method to come to grips with fundamental concepts in Plant sciences, thereby enabling a smooth transition into mainstream understanding of Under Graduate Botany syllabus. This course is designed to facilitate easy learning and eradication of any mental blocks about Botany.
The well- organized curriculum includes all the basic topics in Plant Sciences that are required to build a strong foundation for further study of Botany.

Objectives of the Course:

1. To introduce the learners to various plant groups from simple to the most advanced, understanding about the different characteristics of plant groups and their evolutionary relation.
2. To know the features and structure of plant body and various tissue systems
3. To understand the basic physiological processes pertaining to water relations and enzyme action.
4. To create awareness about the role of plants in ecosystems and it's functioning.
5. To develop sound understanding of basic Mendelian genetics as a foundation for advanced modern genetics.

Course Outcome: A student of F. Y. B. Sc. Botany upon completion of the Remedial Course will be enabled with:

1. Ability to identify basic plant groups, their characteristics and evolutionary relation.
2. Ability to study internal structures of plant organs and its applications in various allied processes.
3. Knowledge about plant physiology with reference to water relations and enzyme action.
4. Awareness and basic understanding about the role of plants in ecosystems and it's functioning.
5. Understanding about the basic concepts in Mendelian Genetics

Sr. No.	Heading	Particulars
1	Title of Course	Elementary Botany
2	Eligibility for Admission	Slow and Medium Learners of F. Y. B.Sc. Botany
3	Level	U.G.
4	Pattern	Regular Assessment
5	Status	Revised
6	To be implemented from Academic year	2019-2020

Unit I Plant Diversity

- Introduction to Algae: Characteristics and Classification
- Introduction to Fungi: Characteristics and Classification
- Introduction to Bryophytes: Characteristics and Classification
- Introduction to Pteridophytes: Characteristics and Classification
- Introduction to Gymnosperms: Characteristics and Classification
- Introduction to Angiosperms: Characteristics and Classification

Unit II Form and Function

- Basic Cell Biology: Structure of Eukaryotic Plant Cell
- Basic Anatomy: Types of Tissues and their organization
- Basic Ecology: Concept of Ecosystem, food chains, energy pyramids, ecological adaptations in plants.
- Basic Physiology: Concept of water relations and enzymes.
- Basic Genetics: Heredity and Variation. Mendelism.

Changu Kana Thakur Arts Commerce and Science College, New Panvel (Autonomous)

Remedial Course in Biochemical Pathways for TYBSc Microbiology

Syllabus

SN	Topic	Hrs
1	• Types of Pathway: Linear, Branched, Circular, constitutive, Inducible, catabolic, anabolic • Link between catabolic and anabolic pathway	01
2	Common Reactions of metabolic pathways: Isomerisation, Epimerisation, Oxidation-Reduction, Group Transfer, Condenstion, Hydrolysis, lysis	01
3	Bioenergetics: Gibbs Free Energy Change, High energy compounds Classification of Enzyme	01
4	Glycolysis and Entner Doudoroff pathway	01
5	Pentose Phosphate Pathway	01
6	TCA cycle, Glyoxylate Bypass, ETC	01
7	Fermentation pathway: Alcohol, Lactic acid, Butyric acid, Mixed acid, Acetone Butanol, Butanediol	01
8	Synthesis and ß-oxidation of Fatty acids	01
9	Synthesis of Pyrimidine, Degradation of Purin nucleotides upto uric acid	01
10	Synthesis of Purine nucleotide	01