

Bridge Course

Rammohan College

At Rammohan College, we recognize the crucial role of the bridge course in facilitating the transition from school to college. This preparatory course, also known as a foundation course, is conducted annually for each department of newly admitted students before the start of the first semester of classes.

The main objective of the course

- The primary goal of the bridge course is to bridge the gap between the subjects studied at the school level and those that students will encounter at the graduation level. This preparatory course is designed to ease the transition and ensure students are well-prepared for the academic rigors of college. The syllabus for the course is framed by the class teacher so that students acquire basic knowledge or ideas on the subject at the honors level or general subject level, which they will learn through graduation.
- Bridge courses may be organized on working days after the regular class hours.
- During the bridge course's class hours, teachers will focus on making the students aware of their attendance and helping them perform well in the examinations.
- These courses aspire to bridge the gap between knowledge, skills, and understanding gaps between various education systems.



SSanyal
Principal
Rammohan College
Kolkata-9

Rammohan College
Department of Bengali
Bridge course-2019-2020
Syllabus for Bridge course in Bengali Honourse-1st Semester

Sl. No	Topics	Lectures delivered by (Name of the faculty)	No of Lectures	Outcomes
1	Content writing	Dr. Tapati Barman	2	Content writing may grow students' imagination, writing skill, thinking and observation power which will bring success in their academic and professional life.
2	Journey of Bengali literature from old age to modern age	Dr. Susmita Das Mazumdar Dr. Kabita Dutta	1 1	Through this discussion students will come to know the different periods and different types of Bengali literature which they have to learn
3	Introduction to history of Bengali language	Prof. Priti Prabha Dutta	2	Students are introduced to origin of Bengali language. They also can gather preliminary idea of the different aspect of Bengali language and its application. It will enhance their interest to read linguistics.
4	Old mythology and its new version	Dr. Anasua Roy Chowdhury	2	The knowledge of Mythology is very much important for Bengali students, because the context of Mythology is a big part of Bengali literature.
5	Translation literature	Dr. Susmita Siddhanta	2	In school life students gather a little knowledge about translation literature. But in college through the syllabus in Bengali they have to know the broad area of translation literature. So this discussion will grow their interest about this topic.



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Rammohan College
Kolkata-9

Rammohan College
Department of Bengali
Bridge course-2021-2022
Syllabus for Bridge course in Bengali Honourse-1st Semester

Sl. No	Topics	Lectures delivered by (Name of the faculty)	No of Lectures	Outcomes
1	Introduction to history of Bengali Literature	Dr. Kabita Dutta Dr. Susmita Das Mazumdar	1 1	Students are introduced to origin of Bengali literature and its chronological progress so that they can know the outline of the syllabus.
2	Introduction to history of Bengali Language	Prof. Priti Prabha Dutta	2	Students are introduced to origin of Bengali Language. They also can gather preliminary idea of the different aspect of Bengali language and its application. It will enhance their interest to read linguistics.
3	Concept of Syllable	Dr. Tapati Barman	2	Concept of syllable will be very much helpful to learn prosody and to read poetry.
4	19 th Century	Dr. Anasua Roy Chowdhury	2	19 th century is an important era of Bengali literature, Bengali culture and 'Bengali Renaissance'. So this syllabus may help to know the modern thinking in literature and awakening of the society.
5	Correct spelling and pronunciation Of Bengali words	Dr. Susmita Siddhanta	2	Correct spelling and perfect pronunciation help a student to use the language properly. Later this perfection will be helpful for their academic success as well as professional career.



S Sanyal
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Rammohan College
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Rammohan College
Department of Bengali
Bridge course-2022-2023
Syllabus for Bridge course in Bengali Honours-1st Semester

Sl. No	Topics	Lectures delivered by (Name of the faculty)	No of Lectures	Outcomes
1	Concept of Syllable	Dr. Tapati Barman	2	Concept of syllable will be very much helpful to learn prosody and to read poetry.
2	Introduction to Phonology and Morphology	Dr. Susmita Das Mazumdar	2	After knowing the inner-structure of language students are better adapted to learn the history of Bengali language, its origin and chronological changes, comparative studies with other language Drama and Theatre are important part of syllabus.
3	Origin of Bengali Drama and Theatre	Prof. Priti Prabha Dutta	2	So students will develop the idea about different types of Drama and its presentation. Besides this an interest of watching Drama may grow in them.
4	Comparative literature	Dr. Kabita Dutta	2	Through the discussion about comparative literature students are introduced to different methods of learning. They also acquire knowledge of other Indian literature.
5	Introduction to history of Bengali Literature	Dr. Susmita Siddhanta Dr. Anasua Roy Chowdhury	2	Students are introduced to origin of Bengali Literature and its chronological progress so that they can know the outline of the syllabus.



S. Samal
Principal
Rammohan College
Kolkata-9

Rammohan College
Department of Bengali
Bridge course-2023-2024
Syllabus for Bridge course in Bengali Honourse-1st Semester

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1	Content writing	Dr. Tapati Barman	2	Content writing may grow students' imagination, writing skill, thinking and observation power which will bring success in their academic and professional life.
2	Journey of Bengali literature from old age to modern age	Dr. Susmita Das Mazumdar	2	Through this discussion students will come to know the different periods and different types of Bengali literature which they have to learn
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S. Sanyal
Principal
Rammohan College
Kolkata-9

Bridge Course Modules for Department of Sanskrit

Honours Course-Semester-I

(2018 to 2024)

Module-I

Sl. No.	Details of the Course	Topics Covered	Allotted Lectures	Out Come
1.	Paper-CC1	a) Introduction of the subject.	01	What is Sanskrit?
		b) Logical and grammatical structure of Sanskrit Language.	01	What are the extraordinary characteristics of Sanskrit language?
		c) The importance of Sanskrit: Rich in vocabulary, rich in literature, rich in thoughts and ideas , rich in meaning and values,	02	Why Sanskrit is called the language of India's soul.
		d) Sanskrit and other Indian languages.	01	What are the obvious relations of Sanskrit with other Indian languages?

Module-II

Sl. No.	Details of the Course	Topics Covered	Allotted Lectures	Out Come
1.	Paper-CC2	a) General grammar.	02	Understanding of structural construct of linguistics.
		b) History of Sanskrit literature.	02	To enrich the student with the knowledge of Indian Culture and tradition.
		c) Inscription.	02	Students learn about the ancient history through inscriptions.

Total Classes required for Bridge course in Honours Course- 11 Lectures



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Principal
Ram Mohan College
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Bridge Course Modules for Department of History

Honours and General Courses Semester-I (2018-2024)

Sl. No	Name of the Topic	Name of the Faculty	No. of Lectures	Outcome
1.	Introduction of the subject	Prof. Uttama Ray	1	What is History? What is the historian's craft?
2.	Reconstructing Ancient Indian History: Sources of History.	Prof. Anuradha Roy Dasgupta (till May 2022) Prof. Malini Basu (from 2022 onwards)	1	The sources of History are fundamental to the understanding of the subject. Students are given an overview of sources while reviewing their knowledge of the same from the school level.
3.	Paleolithic, Mesolithic and Neolithic cultures in India.	Prof. Uttama Ray	1	What is meant by pre-history?
4.	The Harappan Civilization.	Prof. Anuradha Roy Dasgupta (till May 2022) Prof. Malini Basu (from 2022 onwards)	1	The Harappan Civilization was one of the most important among the Bronze age civilisations. It is essential for the understanding of the roots of Indian History and the Indian civilization. It helps students to make a comparative analysis with the other contemporary Bronze age civilizations of the world.
5.	Cultures in transition-The Aryan civilization	Prof. Sudipta Basu.	1	Students get to know about the Aryan civilization and for the first time they get to know about the Rig-Veda which is the most important source of ancient Indian history. Students take an interest in the History of Aryan culture and the debate about the origin of the Aryans.
6.	Paleolithic, Mesolithic and Neolithic cultures in the ancient world other than India.	Prof. Uttama Ray	1	What is culture? The definition of pre-historic cultures.
7.	Food production: Beginning of agriculture and animal husbandry.	Prof. Uttama Ray	1	Relation between agriculture and human permanent settlement.
8.	Bronze age civilization: Egypt	Prof. Alpana Choudhury	1	The Egyptian civilization being one of the important Bronze age civilizations of



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Principal
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	(Old Kingdom)	(till 2023 January). Prof. Malini Basu (from 2023 onwards)		the world, its polity, religion, economy society and culture are introduced to students in order to emphasize it's relevance in the study of ancient world history. Students are encouraged to develop a comparative idea between the Indus valley civilization and the Egyptian civilizations.
9.	Nomadic groups in Central and West Asia: Debate on the Advent of Iron and its Implications.	Prof. Jayanti Sen	1	Nomadism-its explanation and reasons for Iron's importance in human culture.
10.	Slave society in Ancient Greece and Rome.	Prof. Jayanti Sen	1	Why is it important to study classical societies and their institutions and to understand its relevance in later times.
11.	Polis in Ancient Greece.	Prof. Jayanti Sen	1	Continuation of the earlier outcome and importance of studying classical political institutions and governance.

S Sanyal

Principal
Ramachandran College
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Rammohan College
Syllabus of Bridge Course
Department of Philosophy
(2018-2019)

Bridge course in philosophy typically aims to help students gain a foundational understanding of key philosophical concepts, theories, and methodologies. It can be particularly beneficial for students who are new to philosophy or those who need a refresher before tackling more advanced philosophical studies. Here are some key components such a course might include:

SL. NO	TOPICS	LECTURES DELIVERED BY	NUMBER OF LECTURE	OUTCOMES
1.	Introduction to Philosophy (Indian & Western)	Moumita Pal Mukherjee	3	1. Students are better understanding foundation of philosophy, in key concept, thinkers. 2. They understand essential concepts of philosophy. And they also understand historical awareness and background of philosophy. 3. Recognize the contribution of major philosophers such on, Plato, Aristotle, Descartes, Kant, Shankaracharya, Goutam Buddha, Mahavira, Swami Vivekananda. 4. Develop the ability to analyse and critique arguments logically and coherently. 5. Apply philosophical methods to understands complex issues.
2.	Epistemology	Subhankar Mandal	2	1. Understanding fundamental epistemological concept such as belief, truth, knowledge. 2. Differentiate between types of knowledge. 3. Understand and critical evaluate the major theory of knowledge including empiricism, rationalism,



S Sanyal
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				<p>scepticism etc.</p> <p>4. Analyse how these theories address questions about the sources and validity of knowledge.</p> <p>5. Improve ability to think critically and independently about complex issues.</p>
3.	Metaphysics	Anima Roy	2	<p>1. Understanding of essential metaphysical concepts such as being, existence, reality, substance etc.</p> <p>2. Understand learn about and critically evaluate major metaphysical theories such as naturalism, idealism, realism etc.</p> <p>3. Analyse classic metaphysical problems such as, the mind-body problem, free will, consciousness, self, world etc.</p> <p>4. Improve ability to think abstractly and critically about fundamental questions.</p> <p>5. Develop skill in logical analysis and argumentation.</p> <p>6. Reconstruct abstract ideas.</p>
4.	Social-Political Philosophy	Subhankar Mandal	3	<p>1. Understand fundamental concept of society, class, association, state, religion etc.</p> <p>2. Learn about the critically evaluate the major theories in social and political theories such as, socialism, feminism, Marxism, Rawls theory of justification etc.</p> <p>3. use social and political frameworks to approach and solve contemporary social and political problems.</p> <p>4. Consider the ethical implications of social and political theories.</p>
5.	Ethics	Jagoda Roy	2	1. understanding major



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				<p>ethical concept such as, hedonism, eudemonism, utilitarianism, deontological theory, Rawls theory of justification etc.</p> <p>2. understand the arguments and perspectives of key ethical thinkers such as, Aristotle, Kant, Mills, Bentham, Rawls</p> <p>3. enhance ability to critically analyse and construct complex modern arguments.</p> <p>4. use ethical framework to approach to solve contemporary moral problems.</p>
6	Logic	Jagoda Roy	2	<p>1. To understand of essential logical concept such as propositions, argument, validity, invalidity etc.</p> <p>2. Differentiate between deductive and inductive reasoning.</p> <p>3. Develop skills to critically analyse and access the validity and invalidity of arguments.</p> <p>4. Apply logical principles to other area of study such as, mathematics, computer science, law.</p> <p>5. use logical techniques in academic contexts.</p>



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Rammohan College
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Rammohan College
Department of Education

Syllabus for Bridge Course

Semester – I (Honours/Major and General/Minor)










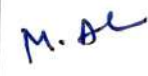
1. Narrow and Broader concept of Education, Aims and objectives of education, Factors of education, Child-centric education and Teacher-centric education, scope of education, and history of education.
2. Relationship between Psychology and Education, Child growth, development and Pedagogy, Learning.
3. Etymological meaning of Philosophy, Relationship between Philosophy and Education, schools of philosophy, humanity, ethics and values.
4. Sociology of education, Relationship between Sociology and Education, Social change, and Social communication.
5. Educational Organization and Management, importance of Guidance and Counseling in Education, Curriculum: Curricular and Co-curricular Activities.
6. Information and Communication in Technology (ICT) and e-learning, Measurement, Assessment and Evaluation process, Importance of Statistics in education.
7. Inclusive Education, Differently Abled students, and Psychology of adjustment. Educational research.
8. Gender and Society, Gender inequality in the schools, Role of teacher in education, Teaching skills, Modes of education, Women education, Life skills education.



SSanyal
Principal
Rammohan College
Kolkata-9

Rammohan College
Department of Education
Bridge Course Class Details 2018- 23

Semester – I (Honours and General)

Sl. No	Topics	Name of the Teacher & Designation	Outcomes	Signature with date
1	Concept, aims & objectives, Factor, and Scope of Education	Mrs. Antara Mukherjee Asso. Prof.	Learners are introduced to origin and etymological meaning of education.	
2	Child-centric & Teacher-centric education, History of education	Mrs. Antara Mukherjee Asso. Prof.	Learners are better preparing to Child-centric and Teacher-centric education, they know the development of the education system in our country.	
3	Psychology of Education, Child development and pedagogy	Dr. Mahfuz Alam Asst. Prof.	Learners are made aware of their psychology, and understand how to handle adolescent period.	
4	Philosophy and Education, School of Philosophy	Dr. Madhab Ghosh Asst. Prof.	To make the students grasp the basic understanding of the theoretical concepts of Philosophy of education and different school of philosophy.	
5	Humanity, Ethics and Values	Dr. Madhab Ghosh Asst. Prof.	To give a basic knowledge about various concepts of humanity, ethics, and human values.	
6	Sociology of Education, Social Change and communication	Dr. Mahfuz Alam Asst. Prof.	To give an overview of the key concepts of sociology of education, social change, and social communication.	
7	Educational Organization & Management, Guidance and Counseling	Mrs. Soumi Mondal SACT	To understand structure and system of different educational organizations and management, and comparative understanding of the guidance and counseling.	
8	Curricular and Co-curricular Activities	Mrs. Soumi Mondal SACT	Learners would learn about the different curricular and co-curricular activities and focus is on the importance in our practical life.	
9	Inclusive Education, Differently Abled students	Dr. Madhab Ghosh Asst. Prof.	To make the students aware about the basic concept of Inclusive education, inclusion, exclusion, and know about the differently abled students.	
10	Gender and Society	Dr. Mahfuz Alam Asst. Prof.	Learners will develop the ideas about gender and society, and its relationship.	

Each class duration 1 hour



S. Samal

Principal
Rammohan College
Kolkata-9

RAMMOHAN COLLEGE
DEPARTMENT OF POLITICAL SCIENCE
BRIDGE COURSE SYLLABUS

1. What is Political? Scope of the political.
2. Nature and Scope of Political Science as a discipline.
3. Theories and Basic Concepts of the discipline.
4. Basic approaches -Qualitative and Quantitative.
5. The Comparative Approach -Comparison of political systems.
6. International Relations- Interaction between nations- Basic trends.
7. Public Administration- Theory and Practice- the Indian context/experience.



S Sanyal
Principal
Rammohan College
Kolkata-9

RAMMOHAN COLLEGE
DEPARTMENT OF POLITICAL SCIENCE

BRIDGE COURSE SCHEDULE

Season 2018-2023

SL NO.	TOPICS	FACULTY NAME	OUTCOME
1	What is Political? The Core	Prof. Sudipta Ghosal	To understand the core of Political Science
2	Power, State and Sovereignty	Dr. Nandini Niyogi	
3	Approaches: Normative and Empirical	Prof. Sudipta Ghosal	
4	International Relations: The Concept	Prof. Manabendra Saha	Basic knowledge of International Relations and Indian Foreign Policy
5	International Relations: Major Theories	Dr. Debjanee Ganguly	
6	Indian Foreign Policy	Prof. Madhusree Poddar	
7	Major Ideologies	Prof. Manabendra Saha	To grasp the major ideological trends
8	Key Ideas of Marxism	Prof. Madhusree Poddar	
9	Comparative Government and Politics: Meaning and Comparison	Dr. Nandini Niyogi	To compare the political systems of nations
10	Political Sociology – I	Prof. Sudipta Ghosal	To understand the sociological aspect of politics
11	Political Sociology – II	Dr. Debjanee Ganguly	
12	Public Administration: Concepts	Prof. Manabendra Saha	To understand public administration in the Indian context
13	Indian Administration	Dr. Debjanee Ganguly	



S Samyul
Principal
Rammoohan College
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RAMMOHAN COLLEGE
DEPARTMENT OF ENGLISH
BRIDGE COURSE

TOPICS	FACULTY	OUTCOME
History of English literature,	Dr. Chumki Majumder	Different ages, features and prominent writers
Sonnet	Dr. Sayonti Mitra	Origin, types, structure, themes & Sonneteers.
Epic (Homer & Milton)	Dipayan Mukherjee	Origin, types (Primary & Secondary)
Drama: Pre-Shakespearean & Shakespearean	Dr. Biswanath Banerjee	Definition, origin, difference between tragedy & comedy,
Restoration Drama	Gobinda Bhakta	Ethics & morality, social criticism
Classical Literature: Metamorphosis	Dr. Piyali Ghosh Sircar	Allegory, difference between fictional and non-fictional works
Pre-Romantic & Romantic Literature	Supriya Pal & Dr. Piyali Ghosh Sircar	Nature as theme & poets
Victorian Literature	Supriya Pal & Chumki Majumder	Conflict between science & religion, imperialism, Darwinism
Modern Period	Dr. Wahida Firdous	Technology, urbanization & wars



S. Samyad
Principal
Rammoohan College
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RAMMOHAN COLLEGE

Department of Economics

Syllabus of BRIDGE COURSE for SEM 1 students (under *CBCS)

The CBCS provides choice for students to take Economics Honours as a prescribed course. The courses should define learning objectives and learning outcomes. Many students start studying Economics at B.Sc. level anew. Many of them come from Bengali medium schools with a language problem. Hence the syllabus of the bridge course has been chalked out to prepare these students to study the subject with a basic understanding.

We allot the first 15 days, effectively two weeks to complete the bridge course. Hence the syllabus is divided into 15 classes.

Class 1:

- a) What is Economics as a subject
- b) Why Economics is a part of social science
- c) Importance of studying Economics
- d) Components of Economics : household and market
- e) What is decision making?

Class 2 :

- a) Who is the decision maker?
- b) Concepts of wants, capability, scarcity
- c) How to generate income
- d) The utilisation of the income
- e) What is satisfaction

Class 3 :

- a) private economy and public economy
- b) What is state
- c) Role of state
- d) Types of state
- e) Functions of state



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Class 4 :

- a) Concept of saving
- b) Concept of investment
- c) What is tax?
- d) How is the tax spent by the government?
- e) What is public expenditure?

Class 5 :

- a) What is trade?
- b) Internal trade
- c) International trade
- d) Who was Adam Smith
- e) Who was Ricardo?

Class 6 :

- a) Why do we study mathematics along with Economics?
- b) What is Mathematical Economics?
- c) What is Mathematics for Economics?
- d) Mathematical theory is nothing but simplification of human affairs
- e) Optimization of day to day problems

Class 7 :

- a) Concept of Mathematical models
- b) Are mathematical models accepted in Economics?
- c) Whether a mathematical model can explain a real life phenomenon or not
- d) If yes, how?
- e) If not, why?

Class 8 :

- a) Kind of numbers
- b) Quantities and distances with suitable diagrams

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Class 9 :

- a) Concept of variables
- b) Relations among variables
- c) Coordinate Geometry, Equalities and inequalities

Class 10:

- a) Functional Relations
- b) Some simple functions
- c) Concept of parameters
- d) Continuity and Smoothness

Class 11:

- a) Explicit and implicit functions
- b) Inverse functions
- c) Functional Relations and Casual Relations

Class 12 :

- a) Functions and Equations: Roots
- b) Explanation with diagram
- c) Slopes, Chords and Tangents

Class 13 :

- a) Theoretical Analysis vs Empirical Analysis
- b) Relevance of Statistics
- c) Why computer software is needed in Economics

Class 14 :

Basic concepts of Differential and Integral calculus.

Class 15 :

- a) What is meant by Political Economy?
- b) Difference between Economic Growth and Economic Development
- c) Short History of British Raaj in India
- d) Indian Economy now



S. Sanyal
Principal
Rammohan College
Kolkata-9

S. Ganguly.
14.08.2018.
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14.08.2018

Rammohan College

Department of Hindi

Bridge Course – 2021-22

Syllabus for Bridge Course in Hindi General – 1st semester

SL NO.	TOPICS	LECTURES DELEVERED (NAME OF THE FACULTY)	NO. OF LECTTURES	OUTCOME
1	INTRODUCTION OF HISTORY OF HINDI LITERATURE	Dr. OM PRAKASH RABIDAS	1	Students are introduced to origin of Hindi literature and its chronology program so that they can know the outline of the syllabus
2	INTRODUCTION OF HISTORY OF HINDI LANGUAGE	Dr. OM PRAKASH RABIDAS	1	Students are introduced origin of Hindi language they also can gather primary idea to the different aspects of Hindi language and its application it will enhance there interest to read literature
3	CONCEPT OF SYLLABI	Dr. OM PRAKASH RABIDAS	2	Concept of syllabus will be very much helpful to learn prose and to read poetry
4	CORRECT SPELLING AND PRONUNCIATION OF HINDI WORDS	Dr. OM PRAKASH RABIDAS	2	Correct spelling and perfect pronunciation help a student to use the language properly later this perfection will be helpful for the academic success as well as professional career



S. Sanyal

Principal
Rammohan College
Kolkata-9

RAMMOHAN COLLEGE

DEPARTMENT OF GEOGRAPHY

Bridge Course Content 2018-2023

Topic	Learning Objectives	Learning outcome	Number of lectures (Teacher assigned with the topic)
Geography as a discipline	To know the scope and nature of the discipline a) Themes b) Branches c) Relationship with other disciplines	At the completion of this topic, students will be able to a) Understand the meaning of Geography b) Relate to the different papers offered in the CBCS course	2(Dr Sibnath Sarkar)
Recent trends and future prospects of mapping: Digital mapping, Spatial planning and mapping with GIS,GPS, Remote Sensing	To know the recent trends in remote sensing and GIS and their application	At the completion of this topic, students will be able to a) Understand the basic concepts of GIS b) Know the names and nature of recent GIS software c) Identify the use of GPS , Remote sensing in spatial planning d) Relate to the papers offered in CBCS to GIS and Remote Sensing .	3(Prof Moumita Mondal)
Career Prospects in Geography	To know the dynamic nature of the discipline and career prospects	At the completion of this topic, students will be able to a) Know the options for future courses of study b) Know the career options After graduation	1(Dr Chandrima Sen)



S. Sanjay
Principal
Rammohan College
Kolkata-9

Geologic Time Scale : Basics	To know the basic concepts of geologic time scale	At the completion of this topic, students will be able to <ul style="list-style-type: none"> a) Identify the major geologic eons, eras and periods in a chart b) Explain the role of fossils in understanding geological time scale c) Relate to the themes of Geologic time scale and dating principles in CBCS course content 	2 (Prof Malabi Goswami)
Soil Lab Orientation	To be familiar with the introductory principles of soil laboratory	At the completion of this topic, students will be able to <ul style="list-style-type: none"> a) Describe soil texture and soil PH determination exercises b) Identify basic features of different soil textures c) Relate to paper on soil in CBCS course 	2 (Prof Madhumita Chatterjee)
Human Geography Introductory lecture	To understand the evolution of Human Geography	At the completion of this topic, students will be able to <ul style="list-style-type: none"> a) Name some of the major thinkers in Human Geography b) Relate to major approaches in Human Geography 	1 (Dr Chandrima Sen)
Human Geography : Social inequality and Gender Disparity	To know the discrimination against women in society and	At the completion of this topic, students will be able to	2 (Dr Chandrima Sen)



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Principal
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	elements of social inequality from secondary reports and primary observation	<ul style="list-style-type: none"> a) Identify the elements of discrimination against women: social, economic and political b) Know the web resources to study gender disparity c) Identify the issues related to discrimination and inequality in Indian society d) Relate to papers on social and cultural geography in CBCS course 	
Climate Change and Global Warming	To define and understand the processes of climate change and global warming	<p>On completion of this topic, Student will be able to</p> <ul style="list-style-type: none"> a) Describe the major processes of solar radiation and heating effect on ecosystem b) Identify the social, economic and political impact of global warming and climate change c) Relate to the papers on climatology, climate change and vulnerability in CBCS course 	1(Prof Moumita Mondal)
Introduction to scale and Surveying	To understand the basic principles of scale and surveying	On completion of this topic, Student will be able to	2(Prof Sumitra Chandra)



SSanyal

Principal
Rammohan College
Kolkata-9

		<p>a) Identify the different types of scale</p> <p>b) Enumerate basic surveying instruments and their purpose</p> <p>b) Relate to angular and linear measurements in their practical course in CBCS</p>	
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SSanyal
Principal
Rammohan College
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Bridge Course Modules for Department of Physics

Honours Course-Semester-I (2018-2024)

Module-I

Sl. No.	Details of the Course	Topics Covered	Allotted Lectures
1.	Paper-CC1-Mathematical Physics (Theory)	Concepts of limit, continuity, average and instantaneous quantities, differentiation. Intuitive ideas of continuity, differentiability, etc. of functions, plotting curves from functions.	03
2.	Paper-CC1-Mathematical Physics (Python-Programming)	a) Basic Ideas of Computer Architecture-Hardware (CPU, RAM, ROM, Clock Speed etc.), Software(OS, Notepad, cmd etc.), Different Programming Languages. b) Introduction to plotting graphs with Gnuplot. c) Introduction to programming in python:	02 01 01

Module-II

Sl. No.	Details of the Course	Topics Covered	Allotted Lectures
1.	Paper-CC2-Mechanics (Theory)	a) Concept of space and time, basic Concept of Dynamics: Review of Newton's Laws: Mechanistic view of the Universe. Concepts of Inertial frames, force and mass, mathematical representation of Newton's law in terms of calculus. b) Theorem on Work and Kinetic Energy, Idea of conservative forces.	02 01
2.	Paper-CC2-Mechanics (Practical)	a) Construction and necessity of vernier caliper, screw gauge, spherometer and traveling microscope. b) Measurements of length (or diameter) using vernier caliper, screw gauge and traveling microscope. c) Idea of systematic and random errors introduced in different instruments.	01 02 01

S. Sanyal
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Total Classes required for Bridge course in Honours Course- 14 Lectures


Bridge Course Modules for Department of Physics

General Course-Semester-I

Sl. No.	Details of the Course	Topics Covered	Allotted Lectures
1.	Paper-CC1/GE1-Mechanics (Theory)	c) Concept of space and time, basic Concept of Dynamics: Review of Newton's Laws: Mechanistic view of the Universe. Concepts of Inertial frames, force and mass, mathematical representation of Newton's law in terms of calculus. d) Theorem on Work and Kinetic Energy, Idea of conservative forces.	02 01
2.	Paper-CC1/GE1-Mechanics (Practical)	d) Construction and necessity of vernier caliper, screw gauge, spherometer and traveling microscope. e) Measurements of length (or diameter) using vernier caliper, screw gauge and traveling microscope. f) Idea of systematic and random errors introduced in different instruments.	01 02 01

Total Classes required for Bridge course in General Course- 07 Lectures




Head of the Dept. of Physics
RAMMOHAN COLLEGE
CALCUTTA-9

S Sanyal
Principal
Ram Mohan College
Kolkata-9

RAMMOHAN COLLEGE
DEPARTMENT OF MATHEMATICS

BRIDGE COURSE FOR B.SC. STUDENTS

A Bridge Course for newly admitted undergraduate students in the course B.Sc. (Hons/General) Mathematics is taken every year first week of the commencement of Semester-I classes. The aim of this course is to bridge the gap between School studies and College studies. The curriculum of the course is designed so that the students can gain basic knowledge of the subjects they will learn at the end of the course. Accordingly, the bridge course has been prepared with the dual objective of reviewing the studies done by the students in the previous academic year and helping them to learn the curriculum of the present class in this academic year. The post-bridge exam is administered after completion of the bridge curriculum to evaluate the student's ability. However, there is a difference between the mathematics taught in school and the mathematics they will study in B.Sc. Physics/Chemistry classes. In order to close this gap and strengthen students' basic knowledge, we included mathematics as a bridge course. It helps students learn math concepts quickly and effectively. To bridge this gap and to strengthen the fundamentals of the students, a module on mathematics is incorporated as bridge course. It would enable the students to grasp the concepts of mathematics quickly and efficiently.



S. Sanjayal
Principal
Rammohan College
Kolkata-9

SYLLABUS FOR BRIDGE COURSE IN MATHEMATICS (2018-23)

Objective: The main objective of the Bridge Course in Mathematics:

- To bridge between the School Mathematics and graduate Mathematics.
- To make learning of Mathematics as a pleasant experience.

Syllabus/Topic Distribution:

S.No.	Topic Name	Name of Lectures	No. of Lectures	Outcome of the topic
1.	Orientation Programme on Mathematics and its application	All Faculty Members	1	In this programme, Faculty provide personalized guidance, addressing individual student needs. Students become more invested in their learning, leading to increased participation and motivation.
2.	Introduction to matrices, vector algebra and partial fractions.	Mr. Arun Kumar Guchhait	1	Students have a solid grasp of fundamental mathematical concepts, setting up for success in various mathematical and scientific pursuits!
3.	Introduction to differential calculus limits and continuity	Dr. Md Ahmadullah	2	Students have a deep understanding of the fundamental concepts of differential calculus, setting up for success in various mathematical and scientific pursuits!
4.	Introduction to integral calculus and applications of integration	Mr. Biswanath Sarkar	2	Students will learn to evaluate definite integrals, including basic integration rules and techniques, to understand how integrals represent the area under curves, and apply this concept to solve problems.
5.	Introduction to series & sequences and trigonometric functions	Dr. Bhuvan Chandra Das	1	Students will learn to understand about converges notion of series and sequences and apply this concept to solve problems.
6.	Introduction to coordinate geometry	Dr. Swapna Bhowal	1	It will help students to learn about Geometry of 2D and 3D dimension.
7.	Introduction to Differential Equations (ODE and PDE):	Ms. Tanushree Musmu	1	Students will understand whole syllabus outline and review of each course of Differential Equations, enabling to model and analyse complex phenomena in various fields!
8.	Assessment and Feedback	Faculty Panel	1	By evaluation and understanding through assessments, assignments, feedback sessions to find the students those who are slow and advanced learner.



S. Sanyal
Principal
Rammohan College
Kolkata-9

RAMMOHAN COLLEGE

Department of Chemistry

Bridge Course 2018-23

Syllabus For Bridge Course In Chemistry Honours

Broad Topics covered	Lectures delivered by the Faculty	No. of Classes	Outcome
1. Atomic structure and Chemical Bonding: Review of atomic structure and periodic table, Chemical Bonding: Ionic, covalent and metallic, Molecular shapes and polarity	Dr Piu Dhal	2	Students learned the principles of atomic structure including the electron configuration, orbital shapes, and energy levels, the different types of chemical bonds etc.
2. Chemical Calculations and analytical techniques: Chemical calculations: concentration, pH, and buffer solutions Analytical techniques: chromatography, spectroscopy, and electrochemistry	Dr Arup Mandal	2	Students developed problem – solving skills using chemical calculations and understood the principles and applications of various analytical techniques including chromatography, spectroscopy, and electrochemistry
3. Gaseous state and Thermodynamics, Gas laws: Boyle's, Charles', and Avogadro's, Ideal and Real gases, Thermodynamic principles: energy. Work and efficiency	Dr Shrabani Sen	2	Students were introduced with basic thermodynamic principles, zeroth law, first law and second law of thermodynamics. Concept of temperature is introduced from kinetic theory of gas.
4. Introduction to stereochemistry involving models for compounds, concept of symmetry elements, asymmetry, projection formula, R/S nomenclature, concept of optical activity and optical rotation.	Dr Samiran Mandal	1	Students are better prepared to grasp concepts of stereochemistry, fundamental of Organic Chemistry which is also in the syllabus of organic chemistry in the beginning of the undergraduate course
5. Introduction to Electroanalytical methods, Solubility effect, Common ion effect, laboratory titrations	Dr Madhuparna Mukherjee	1	Students are better prepared for different titration techniques in both theory and laboratory classes.
6. Redox reactions, Balancing redox equations, electrochemical cells, Standard electrode potential.	Dr Hasibul Beg	1	Students learned about basic redox reactions, different types of cells, balancing the redox reactions, standard electrode potentials.
7. Introduction to organic chemistry laboratory, laboratory equipment handling, separation procedures of organic solid mixtures, purification techniques.	Dr Ashesh Garai	1	Students are made aware of laboratory safety, handling of glassware, and techniques of separation, purification so that they can carry out experiments with greater confidence and skill following instructions and under supervision.



S Sanyal
S Sanyal
Principal
Rammoohan College
Kolkata-9

RAMMOHAN COLLEGE

Department of Zoology

Syllabus of Bridge course for 1st Semester Zoology (honors) students (2018-23)

Objective of the course: To address the needs of students transitioning from school to college by providing a structured introduction to Zoology and study methods while fostering critical thinking and practical skills required for successful completion of the B.Sc. Zoology (honours) program.

Duration: 15 days

Serial No.	Topic Name	Name of Lecturer	No. of lectures	Outcome of Each Topic
1.	Introduction to Zoology and its Importance	All faculty members and staff	1	Students will meet the faculty and staff, fostering community and belonging. They will learn about the department's achievements, strengths in academics, research facilities, extracurricular activities, and potential career paths and research opportunities in Zoology.
2.	Basic Concepts in Biology	Dr. Samarendra Nath Banerjee	1	Assess students' basic knowledge about zoology through verbal questionnaires. This information will help lecturers tailor their lesson plans to address any gaps and ensure a more effective learning experience
		Dr. Shantanu Das	1	
3.	Semester System and Examination	Dr. Kaustav Dutta Chowdhury	1	Students will understand the semester system and how courses are structured over the academic year, ensuring they are aware of important deadlines and schedules. Understand the types of assessments they will undergo during their studies in the Zoology department, preparing them for different examination formats and evaluation methods.
4.	Concept of Syllabus	Dr. Santi Ranjan Dey	1	Students will understand whole syllabus outline and an overview of each course/module for the first semester, covering major topics and themes in Zoology.
5.	Basic biochemistry	Mr. Sanjay Kumar Paul	2	It will help student to learn about cellular structure, biochemical pathways and practical.
6.	Introduction to Animal World	Mrs. Chayanika Roy	2	Students will understand basic zoological concepts, classify animals based on traits, describe major animal phyla, explain evolutionary relationships.
7.	Assessment and Feedback	Faculty Panel	1	Evaluate understanding through quizzes, assignments, and feedback sessions to gauge learning outcomes and address any remaining gaps.



S. Sanyal
Principal
Rammoohan College
Kolkata-9

RAMMOHAN COLLEGE

Department of Zoology

Syllabus of Bridge course for 1st Semester Zoology (honors) students (2019-20)

Objective of the course: To address the needs of students transitioning from school to college by providing a structured introduction to Zoology and study methods while fostering critical thinking and practical skills required for successful completion of the B.Sc. Zoology (honours) program.

Duration: 15 days

Serial No.	Topic Name	Name of Lecturer	No. of lectures	Outcome of Each Topic
1.	Introduction to Zoology and its Importance	All faculty members and staff	1	Students will meet the faculty and staff, fostering community and belonging. They will learn about the department's achievements, strengths in academics, research facilities, extracurricular activities, and potential career paths and research opportunities in Zoology.
2.	Basic Concepts in Biology	Dr. Samarendra Nath Banerjee	1	Assess students' basic knowledge about zoology through verbal questionnaires. This information will help lecturers tailor their lesson plans to address any gaps and ensure a more effective learning experience
		Dr. Shantanu Das	1	
3.	Semester System and Examination	Dr. Kaustav Dutta Chowdhury	1	Students will understand the semester system and how courses are structured over the academic year, ensuring they are aware of important deadlines and schedules. Understand the types of assessments they will undergo during their studies in the Zoology department, preparing them for different examination formats and evaluation methods.
4.	Concept of Syllabus	Dr. Santi Ranjan Dey	1	Students will understand whole syllabus outline and an overview of each course/module for the first semester, covering major topics and themes in Zoology.
5.	Basic biochemistry	Mr. Sanjay Kumar Paul	2	It will help student to learn about cellular structure, biochemical pathways and practical.
6.	Introduction to Animal World	Mrs. Chayanika Roy	2	Students will understand basic zoological concepts, classify animals based on traits, describe major animal phyla, explain evolutionary relationships.
7.	Assessment and Feedback	Faculty Panel	1	Evaluate understanding through quizzes, assignments, and feedback sessions to gauge learning outcomes and address any remaining gaps.



S. Sanyal
Principal
Rammoohan College
Kolkata-9

RAMMOHAN COLLEGE

Department of Zoology

Syllabus of Bridge course for 1st Semester Zoology (honors) students (2022-23)

Objective of the course: To address the needs of students transitioning from school to college by providing a structured introduction to Zoology and study methods while fostering critical thinking and practical skills required for successful completion of the B.Sc. Zoology (honours) program.

Duration: 15 days

Serial No.	Topic Name	Name of Lecturer	No. of lectures	Outcome of Each Topic
1.	Introduction to Zoology and its Importance	All faculty members and staff	1	Students will be acquainted with the faculty and staff, fostering a sense of community and belonging. Gain an understanding of the department's achievements and strengths in academics, research facilities, and extracurricular activities. Recognize the potential career paths and research opportunities available in Zoology.
2.	Basic Concepts in Biology	Dr. Samarendra Nath Banerjee	1	Assess students' basic knowledge about zoology through verbal questionnaires. This information will help lecturers tailor their lesson plans to address any gaps and ensure a more effective learning experience.
		Dr. Shantanu Das	1	
3.	Semester System and Examination	Dr. Kaustav Dutta Chowdhury	1	Students will understand the semester system, course structure, important deadlines, and assessment types, preparing them for different examination formats and evaluation methods.
4.	Concept of Syllabus	Dr. Santi Ranjan Dey	1	Students will understand whole syllabus outline and an overview of each course/module for the first semester, covering major topics and themes in Zoology.
5.	Basic biochemistry	Mr. Sanjay Kumar Paul	1	It will help student to learn about cellular structure, biochemical pathways and practical.
		Dr. Samik Acharjee	1	
6.	Introduction to Animal World	Mrs. Chayanika Roy	2	Students will understand basic zoological concepts, classify animals based on traits, describe major animal phyla, explain evolutionary relationships.
7.	Assessment and Feedback	Faculty Panel	1	Evaluate understanding through quizzes, assignments, and feedback sessions to gauge learning outcomes and address any remaining gaps.



S. Sanyal
Principal
Rammoohan College
Kolkata-9

RAMMOHAN COLLEGE

Department of Zoology

Syllabus of Bridge course for 1st Semester Zoology (honors) students (2023-24)

Objective of the course: To address the needs of students transitioning from school to college by providing a structured introduction to Zoology and study methods while fostering critical thinking and practical skills required for successful completion of the B.Sc. Zoology (honours) program.

Duration: 15 days

Serial No.	Topic Name	Name of Lecturer	No. of lectures	Outcome of Each Topic
1.	Introduction to Zoology and its Importance	All faculty members and staff	1	Students will be acquainted with the faculty and staff, fostering a sense of community and belonging. Gain an understanding of the department's achievements and strengths in academics, research facilities, and extracurricular activities. Recognize the potential career paths and research opportunities available in Zoology.
2.	Basic Concepts in Biology	Dr. Samarendra Nath Banerjee	1	Assess students' basic knowledge about zoology through verbal questionnaires. This information will help lecturers tailor their lesson plans to address any gaps and ensure a more effective learning experience
		Dr. Shantanu Das	1	
3.	Semester System and Examination	Dr. Kaustav Dutta Chowdhury	1	Students will understand the semester system, course structure, important deadlines, and assessment types, preparing them for different examination formats and evaluation methods.
4.	Concept of Syllabus	Dr. Santi Ranjan Dey	1	Students will understand whole syllabus outline and an overview of each course/module for the first semester, covering major topics and themes in Zoology.
5.	Basic biochemistry	Mr. Sanjay Kumar Paul	1	It will help student to learn about cellular structure, biochemical pathways and practical.
		Dr. Samik Acharjee	1	
6.	Introduction to Animal World	Mrs. Chayanika Roy	2	Students will understand basic zoological concepts, classify animals based on traits, describe major animal phyla, explain evolutionary relationships.
7.	Assessment and Feedback	Faculty Panel	1	Evaluate understanding through quizzes, assignments, and feedback sessions to gauge learning outcomes and address any remaining gaps.



S. Sanyal
Principal
Rammohan College
Kolkata-9

RAMMOHAN COLLEGE
Department of Botany
Syllabus for Bridge Course in Botany Honours
Session: 2018-2024

Serial No.	Broad Topics covered	Lectures delivered by	No. of lectures	Outcomes
1.	Different aspects of Botany	Dr. Krishnendu Sarkar	2	Students are introduced to the biology of plants. In the introductory session we like to explain: how plants differ from other living beings; how plants play the pivotal role in the ecosystem; majority of the plants occupied the status of producer in the food chain. Only the green plants have the ability to trap the solar energy into chemical energy and the trapped solar energy is used up in the production of carbohydrates in the process of photosynthesis. All non-green organisms, including human beings are dependent on plants for food. To study botany may open up various avenues as future prospect, like Microbiology, Phycology, Biofertilizer, Plant systematics, Mycology & Plant pathology, Palaeobotany & palynology, Plant Physiology & biochemistry, Tissue culture, Genetics, Cell biology, Ecology, Pharmacognosy, Economic botany and so on.
2.	Introduction to the diversity in the plant kingdom	Dr. Krishnendu Sarkar	1	Students are acquainted with the enormous diversity of the plant kingdom. In this connection we also portray the status of India as one of the megabiodiversity centre of the world which is evident from the following data: Species of algae- 2500; Bryophytes- 2564; Psilopsida- 12; Lycophyta- 103; Horsetails-7; Ferns- 900; Conifers- 55; Cycads- 5, Gnetophytes- 4, Flowering plants-15000
3.	Phycology	Dr. Moumita Datta	1	Students will be introduced the knowledge of plant kingdom and the position of algae in plant kingdom along with their importance.
4.	Taxonomy of angiosperms	Dr. Krishnendu Sarkar	2	Angiosperms or flowering plants are most dominant plant community in our planet. They constitute the economically enormous plant wealth that are essential for our survival. Taxonomy deals with the nomenclature, classification and description of angiosperms. Students learn the significance of angiosperm taxonomy.
5.	Microbiology	Dr. Daliya Hom Chowdhury	2	Study of microbes-an inevitable fact in all branches of life science including plant science: future prospect. Brief discuss on origin of life on earth-presence of ancient forms of bacteria even now a days under some extreme environment. Discussion on eubacteria in general their diversification, immense role in our daily life, their role as pathogen as well. Future scope of studying microbiology. Importance of studying virology- future prospects particularly relating to higher studies.



S. Sanyal
Principal
Ram Mohan College
Kolkata-9

Serial No.	Broad Topics covered	Lectures delivered by	No. of lectures	Outcomes
6.	Biomolecules	Dr. Anindita Das	2	Students are introduced to the concept of biological molecules. What are Biomolecules? What are the different types of molecules present in living organisms? Introduction to the functions of Carbohydrates, lipids, amino acids, proteins, enzymes, nucleotides, nucleic acids – DNA, RNA, Vitamins, pigment molecules found in plants. Also, familiarising the structure of these molecules very briefly with the students. Introduction to chemical bonding, types of bonds – covalent, non-covalent, weak interactions with special emphasis on hydrogen bonding.
7.	Plant diversity	Dr. Shibu Das	1	Students will be introduced about knowledge of plant community, their biodiversity and management.
8.	Phyto-pathology	Dr. Moumita Datta	1	Brief introduction on plant disease and an overview on negative effects on cultivation. They also develop the brief idea on disease management.
9.	Microscopy	Dr. Daliya Hom Chowdhury	1	An overview discussion different aspect of practical syllabus. Discussion on compound microscope and simple light microscope- its different parts and their functions.

SSanyal
Principal
Rammohan College
Kolkata-9

