

# PROGRAMME OUTCOME & COURSE OUTCOME

[( Programme and courses offered by Dhing College,  
Nagaon ( Assam)]



[Dhing College is an affiliated institution under Gauhati University , Assam. About **29 ( Twenty nine)** Courses are run by the College under 03 UG programme in TDC BA ( Arts), B.Sc ( Science) & B.Com ( Commerce) as per permission/ affiliation given by the affiliating Gauhati University vide its letter no: GU/AFF/2021/1178 dated 06/08/2021 ]

Dated : 02/04/2022

Principal  
Dhing College, Nagaon ( Assam)

## BROAD BASED OUTCOME OF THE UG PROGRAMME & COURSES IN ARTS , SCIENCE & COMMERCE.

The college follows the recommendations of the UGC on Evaluation Reforms in Higher Educational Institutions in India. The recommendations provide necessary mechanisms to implement outcome-based education in Educational Institutions in India. The Program Outcomes and Course Outcomes for all programs offered by the Dhing College are clearly stated, displayed on the college website and communicated to teachers and students through the prospectus. The College has clearly stated learning outcomes of the Programs and Courses offering in the College and the following mechanism is followed to communicate the learning outcomes to the teachers and students. Hard Copy of syllabi and Learning Outcomes are available in the college/departments for ready reference to the teachers and students. Learning Outcomes of the Programs and Courses are highlighted and made aware to the students in the induction ceremony-cum-orientation programme at the beginning of the session. The importance of the learning outcomes has been discussed and communicated to the teachers in staff meeting and IQAC meeting. The College offers degree in Bachelor of Arts (B.A), Science ( B.Sc) and Commerce ( B.Com) with different combinations with Regular & Honours Courses. The students go through a well-defined study programme for their all-round development. Following the successful accomplishment of BA,B.Sc& B.Com students can look for jobs or go for higher education such as postgraduate degree in any of the areas after graduation has been completed. The major outcomes of this programme are that the students can go for a career option in various areas following successful accomplishment of their Bachelor of Arts, Science & Commerce degree. In addition to above, college also introduced Add-on/ Certificate courses in Herbal Sciences as part of UGC-COP programme in 2016-2019 session. Recently College has introduced Medical Laboratory Technician ( MLT) courses with PPP mode signing a MOU with Darpan Registered NGO w.e.f 2020 ( session starts lately from Oct/2021 due to COVID -19) based on employment potentiality in skill & health care sector. As the college is only the oldest institution of higher learning in greater area of the region, students coming from vast locality is highly benefited not only in terms of awarding or achieving the degree but also in making them to be good citizen and employability. Besides the Programme Outcomes mentioned above, the institution offers several meaningful learning experiences and opportunities inside and outside the classroom that enhance the learning outcomes.

**Bachelor of Arts (BA):** The Bachelor of Arts ( B.A) offered in the subject like *Assamese, Bengali, English, Education, Economics, History, Polscience & Geography*. Students after completion of Bachelor of Arts programme will be able to analyze & synthesize and integrate various aspects of knowledge and develop the capability to evaluate the validity of arguments and conclusion. In other words, develop advance critical skills. After the completion of the B.A course students will have option of going for higher studies and then pursue research. Arts graduate can also join professional course like journalism, designing, mass communication, law etc.

**Environmental Studies (ENS)** is a compulsory subject in degree third and fourth semester in arts and science stream. It is also compulsory in third semester of commerce stream. The

syllabus of EVS covers all aspects of environment like natural resources, biodiversity, ecosystem, pollution, social issues, human environment etc. After completion of this study, students are able to identify the causes and impacts of all environmental issues. They have the scope to work in different government and non-governmental organisation as environmental professionals. They are also able to take measures to control local environmental problems. They can aware the general people about the effects of environmental problems and also they can suggest steps for environmental conservation.

**Bachelor of Science (B.Sc.)** introduced in 1987 and comes under provincialisation in 1998 under higher education department, Assam provides three year degree programme (both Major and General) in different subject areas like *Botany, Zoology, Physics, Chemistry, and Mathematics*. The programme is most beneficial for students who have a strong interest and background in Science and desire in choosing science as career. The programme is also beneficial for students who wish to pursue multi and inter-disciplinary science careers in future in the field of engineering & technology. After the completion of the course, students will have the option to go for post-graduation and then pursue research activities .They can also go for professional job oriented courses. They can turn entrepreneurs and establish their own industrial units.

**Bachelor of Commerce (B.Com)** is a three year degree programme (both Major and General) in Commerce in the subjects Accountancy & Management. After completion of this B.Com course students can also pursue higher PG studies in the Commerce, Management, and other related courses etc. as well as undertake research. The knowledge from this course can help a student to work in various public as well as private sector organizations in the field of accounting, auditing, marketing, sales, administrative management etc. This course can also help students to undertake entrepreneurial ventures on their own.

## ROGRAMME SPECIFIC OUTCOME AND COURSE OUTCOME

### ❖ A] BA ASSAMESE HONOURS & GENERAL COURSE

The Department of Assamese Dhing College was established 1965 and was the founder department of the College. Now this department is chaired by a dedicated team of teachers not only to improve discipline based activity but working as a team and many of its activities like – seminars, workshops, curricular, revisions and the declaration of examination result in record time are successful primarily because of this capacity to work together.

#### ➤ Programme Outcome

1. The study of Assamese Language and Literature will enrich the Assamese Culture to a great extent.
2. Student will also learn the socio cultural and political knowledge of historical periods.
3. Students will acquaint the knowledge on the life of famous poets and authors and their memorable work.

4. Student will also gain knowledge and develop skill to engage themselves in the teaching and other jobs like Reporter, Proof-reader, and News-reader in vernacular language.

➤ **Course Specific Outcome**

**BA 1<sup>st</sup> Semester (Hon.)**

<b>Paper</b>	<b>Course Outcome</b>
ASM-HC-1016 History of Assamese Literature - 1	They will know about History of Assamese Literature, Pre Sankar Era and Sankar Era
ASM-HC-1026 History of Assamese Literature - 2	A Clear idea about Sarit Sahitya, History, Pre Orunodoi, and Orunodoi Era. Also about the writer of Orunodoi Literature

**BA 2<sup>nd</sup> Semester (Hon.)**

<b>Paper</b>	<b>Course Outcome</b>
ASM-HC-2016 Linguistics	They will know about Language, Linguistics and Branches of Linguistics, Phonology, Morphology, Morph and syntax.
ASM-HC-2026 Literary Criticism	They will know about the Assamese Literature and criticism.

**BA 3<sup>rd</sup> Semester (Hon.)**

<b>Paper</b>	<b>Course Outcome</b>
ASM-HC-3016 Assamese Literature	They will know about Assamese story, poetry and short story.
ASM-HC-3026 Introduction of Assamese Poem	They will learn about old and modern Assamese poetry.
ASM-HC-3036 Assamese Culture	The student will know about the Assamese cultural studies and various religion of Assam

**BA 4<sup>th</sup> Semester (Hon.)**

<b>Paper</b>	<b>Course Outcome</b>
ASM-HC-4016 Comparative Indian Literature	The student will learn about the theory of comparative Indian Literature and Indian Literature
ASM-HC-4026 Assimilation of Assamese Language	They will know about the Assimilation of Assamese Language and also Aryan and non-Aryan Language.
ASM-HC-4036 Assamese	They will know about History of Assamese

Prose	Prose
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BA 5<sup>th</sup> Semester (Hon.)

Paper	Course Outcome
ASM-HC-5016 Assamese Drama and Presentation Style	The student will learn about History of Assamese Drama and the Presentation Style
ASM-HC-5026 Assamese Grammar	The student will learn about the History of Assamese Grammar, Branches of Grammar and Elements of Assamese Grammar

BA 6<sup>th</sup> Semester (Hon.)

Paper	Course Outcome
ASM-HC-6016 Assamese Short story and Novel	They will know about History of Assamese short story and novel
ASM-HC-6026 History of Assamese Script	The student will learn about the Origin of Assamese Script and its evolution

BA 3<sup>rd</sup> Semester

Paper	Course Outcome
ASM-SE-3014 Skill Development	They will learn about Translation form Assamese to English, English to Hindi and also learn about proof reading

BA 4<sup>th</sup> Semester

Paper	Course Outcome
ASM-SE-4014 Skill Development	The student will learn how to write creative writings

BA 5<sup>th</sup> Semester

[Elective]

Paper	Course Outcome
ASM-HE-5016 Assamese Folk Literature	The student will learn about Folklore of Assam
ASM-HE-5026 Assamese Romantic Poem	The student will learn about Assamese Poem
ASM-HE-5036 Sankardev	They will know about the contribution of Sankardev
ASM-HE-5046 Assamese	They will learn about the Assamese Science

Science Fiction	Fiction
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BA 6<sup>th</sup> Semester

Elective

Paper	Course Outcome
ASM-HE-6016 Lakshminath Bazbaroa	They will learn about the contribution of Lakshminath Bazbaroa towards the Assamese society
ASM-HE-6026 Banikanta Kakati	They will learn about the contribution of Banikanta Kakati towards the Assamese society
ASM-HE-6036 Assamese children Literature	They will know about the Assamese Children Literature
ASM-HE-6046 Assamese Dialectology	They will learn about the Assamese Dialect and Dialect used in Assamese Literature
ASM-HE-6056 Project Paper	The student will learn about how to make Project

Generic

Semester	Paper	Course Outcome
I	ASM-HG-1016 Recitation	They will learn the theoretical and practical knowledge Recitation
II	ASM-HG-2016 Adaptation	They will learn the theoretical and practical knowledge Adaptation
III	ASM-HG-3016 Assamese Drama And Theatre Art	They will learn the theoretical and practical knowledge of Assamese Drama and Theatre Art
IV	ASM-HG-4016 Modern Assamese Lyrical Literature	They will learn about the Modern Assamese Lyrical Literature and its development

❖ **B] BA GENERAL IN (BENGALI)**

Department of Bengali of the LOKD College is the epicenter of its culture and heritage. Pursuing Bengali as Major subject in degree level is a turning point for students to develop their literary aptitude and linguistic foundation. Students will have the opportunity to study the socio-political as well as cultural history extensively of Bengali along with that of different literary and

artistic movements. Study of literary texts that reflect the socio- cultural and political interests of different periods of Bengali literary history would assist the students in comprehending the diverse aspects and issues of the concerned authors and tendencies of the time. The knowledge of this venture can help students find engagement opportunities in various fields. It also stimulates learners' creative instinct for getting involved in various cultures of literature and language.

Along with this, Bengali Major Course students also learn other literatures. The literary tools learnt by the students under the university curriculum may be applied for literary appraisal and critical thinking. The department of Bengali focuses on exploring newer ideas in the budding talents of the students. The syllabus of the subject provides space for students to get acquainted with the literature and culture emerging through a unique experience and against the backdrop of recent political and social events of both urban and rural vicinity of essential global phenomena. Familiarity in Phonetics, Morphology, syntactic and semantic structures of linguistic field is one another area of benefit in the subject.

Bengali Department of LOKD College provides students platform for various academic and other important programs with an environment that is intellectually stimulating and challenging and seeks to teach them not only the discipline in all its dimensions but also valuable life lessons. While it maintains an atmosphere that is friendly and helpful, the Department prides itself in adherence to schedules, it insists on serious and sustained study. Its faculty has a reputation for working as a team and many of its activities, like seminars, workshops, curricular revisions and the declaration of examination results in record time are successful primarily because of this capacity to work together.

#### ❖ **BA MAJOR & GENERAL IN ENGLISH**

**PO 1:** After the completion of the Programme students will “understand and use the English language effectively, build vocabulary and will be introduced to the current ideas and issues” through the texts included in their English syllabus.

**PO 2:** Students will have exposure to the different periods like – Medieval, Renaissance, Neo-classical, Romantic, Victorian, Modernism, Postmodernism etc. and understand their sites of convergence and divergence.

**PO 3:** Students will gain acquaintance with the socio-political, religious, philosophical and cultural trends that affect the production of texts; simultaneously, how these trends affect their reception.

**PO 4:** Students will understand theories like Feminism, Post colonialism, New Historicism, Cultural Materialism etc. and their associated concepts through which texts can be “understood.”

**PO 5:** Students will comprehend the forms and structure of different genres like poetry, drama, novel, short story, biography, autobiography etc. Selected texts from the genres like Poetry, Drama, Novel, and Essay will enable students to analyse them in terms of the theoretical concepts.

**PO 6:** Specific texts on Biographies, Autobiographies, Memoirs and Letters will enable students to understand the elements of narrativization in the Life-writings, the constructed nature of the self and the ‘textual’ nature of all lives which are re-made for the readers through the act of telling as the syllabus/programme aims at.

**PO 7:** Texts from Women Writing will make students realise how with the growing feminist awareness a specific body of literature written by women have become a part of the literary canon. It will enable them to understand how women’s texts foreground the status and condition of women and the ways through which they want to demand space and assert “a voice of their own.”

**PO 8:** The study of texts with an ecological orientation will enable students to understand the symbiotic relationship between literature and physical environment; how nature is not just a passive background in literary texts but has a central presence in determining the interpretation of a particular text.

**PO 9:** Students will gain a firm grounding regarding the Classical and Judeo-Christian Myths, ideas and images associated with them and their recurrence in the literary texts like poetry, drama, fictions etc.

**PO 10:** Finally, students will have a critical understanding of what “English” and “Literature” mean in the term *English Literature* of the course/programme.

### **Programme Specific Outcome**

PS01: A detailed study of the English Major Course will help the students to be more efficient in the English language. Their reading, writing, thinking and communication skills in the English language will be developed.

PS02: The students will learn historical contexts, psycho-social aspects and discern various cultural and moral values. The course will help them to infuse moral-ethical values broadening their overall perspective.

PS03: Students analysis, synthesis and evaluation of the course will develop their critical reading, writing and thinking skills.

PS04: The Course will help the students to understand and analyze the fictional and non-fictional works, poetry and drama of different periods and places. It helps to strengthen their aesthetic sense.

### **Course outcome**

**C01:** The English Major course will introduce the students to the different circumstances that contributed towards the shaping of literature from 20<sup>th</sup> century to the present. They will also study the selective works of modern and post-modern era that represents the shifts in trends and movements in critical outwork.

**C02:** Students are expected to study the special and literary history of the Victorian age and will appreciate poetry, short stories, essays and novels of the period.

**C03:** It makes the students to be acquainted with the social and literary condition of England from the Restoration period to the Romantic Age. They are about to relate this knowledge to a study of the various genres of that age.

**C04:** The students will study poetry and drama of medieval period to the Renaissance to relate the circumstances that influenced and contributed to the production of English literary texts.

### **Curriculum Based Outcome**

1. History of English language and structure since the early period until modern period enables the student to have a broad purview of the subject.
2. Translation studies is part of the syllabus and students get to study texts written before and after Indian Independence to analyze the different writing styles of writers across the age.
3. The social, historical and literary contexts of the classical-Christian myths are something they are exposed to.
4. Environment and ecology is of much importance in the present scenario and students get to learn the theories related to ecological criticism.
5. Women's writing is another area where students are aware of the feminist theories and how they reflect on the women's present status and condition.
6. Students are further exposed to different forms of reading and life writing like biographies, memoirs and letters.
7. Students are also able to learn other literary forms of writing like essays from texts of the 18<sup>th</sup> centuries till date.
8. English literature students get exposure to literary theories as the texts of 20<sup>th</sup> century subscribed in their course English and European drama.

## **❖ BA HONOURS & GENERAL /REGULAR DEPARTMENT OF ECONOMICS**

### **PROGRAMME OUTCOME OF ECONOMICS UNDER C.B.C.S OF GAUHATI UNIVERSITY**

#### **Core paper-1**

**Introductory Microeconomic-** Students will be able to learn the basic principles of microeconomic theory. They will learn how microeconomic concepts can be applied to analyze real-life situations.

#### **Core paper-2**

**Mathematical Methods for Economics-I** -The students will learn the method of applying mathematical techniques to economic theory in general.

#### **Core paper-3**

**Introductory Macroeconomics** –The students will learn the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money, inflation, and the balance of payments.

#### **Core paper-4**

**Mathematical Methods for Economics-II:** The students will learn the method of applying mathematical techniques to economic theory in general. They will also learn Linear algebra, Functions of several real variables, Multi-variable optimization and Differential equation.

**Core paper- 5**

**Intermediate Microeconomics-1** The course will be helpful to students to provide a sound training in microeconomic theory to formally analyze the behavior of individual agents.. This course will help the students to understand the behavior of the consumer and the producer and also covers the behavior of a competitive firm.

**Core paper-6**

**Intermediate Macroeconomics 1** Students will learn various alternative theories of output and employment determination in a closed economy in the short run as well as medium run, and the role of policy in this context. It will also introduce the students to various theoretical issues related to an open economy.

**Core paper-7 :**

**Statistical Methods for Economics:** Students will be able to learn the notion of probability, probability distributions of discrete and continuous random variables and of joint distributions. This course will also help the students to understand sampling techniques used to collect survey data, sampling distributions that act as a bridge between probability theory and statistical inference. Core paper-8 Intermediate Microeconomics-ii

**Core paper-8**

**Intermediate Microeconomics-ii** Students will learn the general equilibrium and welfare, imperfect markets and topics under information economics.

**Core paper-9**

**Intermediate Macroeconomics-ii** The student will learn the long run dynamic issues like growth and technical progress. They will also be familiar with the micro-foundations to the various aggregative concepts .

**Core paper-10 :**

**Introductory Econometrics:** The students will learn the basic econometric concepts and techniques, concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models.

**Core paper-11.**

**Indian Economy-I** The outcome of this paper is to make students aware of the major trends in economic indicators and policy debates in India in the post-Independence period, with particular emphasis on paradigm shifts and turning points.

**Core paper-12**

Development Economics-The course is designed to make the student learn the alternative conceptions of development and their justification, aggregate models of growth and cross-national comparisons of the growth experience

### **Core paper-13**

Indian Economy-II Students will learn the examination of sector-specific policies and their impact in shaping trends in key economic indicators in India.

### **Core paper-14 :**

Development Economics-II The student can learn the basic demographic concepts and their evolution during the process of development, the governance of communities and organizations, sustainable growth, globalization and increased international dependence on the process of development.

### **DISCIPLINE SPECIFIC ELECTIVE (DSE) PAPERS:**

1. **ECONOMICS OF HEALTH AND EDUCATION**—The student will learn about achieving universal primary education, reducing child mortality, improving maternal health and combating diseases. This course provides a microeconomic framework to analyze, among other things, individual choice in the demand for health and education, government intervention and aspects of inequity and discrimination in both sectors.
2. **MONEY AND FINANCIAL MARKETS**-----The students are aimed to make aware of functioning of the monetary and financial sectors of the economy, the organization, structure and role of financial markets and institutions, interest rates, monetary management and instruments of monetary control. Financial and banking sector reforms and monetary policy with special reference to India
3. **PUBLIC FINANCE** ----- The student can learn the efficiency and equity aspects of taxation of the centre, states and the local governments and the issues of fiscal federalism and decentralization in India.
4. **ENVIRONMENTAL ECONOMICS**---. Students will be able to learn the economic principles applied to environmental questions and their management through various economic institutions, economic incentives and other instruments and policies.
5. **INTERNATIONAL ECONOMICS**--- The students will learn composition, direction and consequences of international trade, and the determinants and effects of trade policy. They will also have an insight to the causes and consequences of the rapid expansion of international financial flows in recent year.
6. **THE ECONOMY OF ASSAM**----The outcome of the paper is to make students aware of the Assam economy with specific emphasis on the problems facing the economy and the remedies as well.

### **SKILL ENHANCEMENT COURSE (PAPERS)**

**1 DATA COLLECTION AND PRESENTATION**--- The student will learn the use of data, presentation of data using computer software like MS-Excel. Students will be involved practically to preparation of

questionnaires/interview schedules, collection of both primary and secondary data and its presentation.

**2 DATA ANALYSIS----** The students will learn how data can be summarized and analyzed for drawing statistical inferences. The students will also learn important data sources that are available and will learn the use of statistical software like SPSS/PSPP to analyze data.

### **REGULAR COURSES**

1. **PRINCIPLES OF MICROECONOMICS–I**
2. **PRINCIPLES OF MICROECONOMICS–II**
3. **PRINCIPLES OF MACROECONOMICS–I**
4. **PRINCIPLES OF MACROECONOMICS–II**
5. **ECONOMIC DEVELOPMENT AND POLICY IN INDIA–I**

The students will learn the major trends in aggregate economic indicators in India and places these against the backdrop of major policy debates in India in the post- Independence period.

### **7. MONEY AND BANKING**

The Students will be able to learn the functioning of the monetary and financial sectors of the economy, the organization, structure and role of financial markets and institutions, interest rates, monetary management and instruments of monetary control, Financial and banking sector reforms and monetary policy with special reference to India.

### **1. ENVIRONMENTAL ECONOMICS :**

### **8 ECONOMIC DEVELOPMENTS AND POLICY IN INDIA–II**

Students are expected to learn and examine sector-specific trends in key indicators and their implications in the post-Independence period of India

**9. ECONOMIC HISTORY OF INDIA1857-1947—**The students will learn the analyses of key aspects of Indian economic development during the second half of British colonial rule.

### **10. PUBLIC FINANCE--- As stated earlier**

### **GENERIC ELECTIVE**

### **1 ECONOMIC DEVELOPMENT AND POLICY IN INDIA–I.**

### **2 ECONOMIC DEVELOPMENT AND POLICY IN INDIA–II**

## **❖ BA HONOURS AND GENERAL /RE IN (EDUCATION)**

### **PROGRAMME OUTCOME**

EDUCATION is the word related with everything. Different types of topic are included in this one subject. Without education we cannot adjust with our society. So

some important point which are represent the outcome of education programme, which are as follows –

**PSO:1:** Develop the awareness of Education in a present social context .

**PSO 2:** Understanding the importance of psychological term i.e. adjustment mental health, hygiene, Traits etc. Reflect in practical life.

**PSO 3:** To make students understand how philosophical ideas have influenced ideas.

**PSO4:**To understand about different methods, devices, models of teaching learning process and related Topic of teaching profession.

**PSO5 :**To create awareness among the students that the importance of education in practical life.

**PSO 6:** To determine various abilities of the students i.e. memory, attention, recall, recognition e.t.c. of students.

**PSO 7:** Develop the management process related with different aspects of education.

**PSO8:**To understand the burning problems of environmental and population issues.

**PSO9:**This programme helps students to develop the balanced personality in the changing society  
**PSO 10:** Students will acquire knowledge of research and will find scope to study B.Ed, M.Ed etc.

### **COURSE OUTCOME**

**CO1 :FOUNDATION OF EDUCATIONAL THEORIES AND PRINCIPLES :**Develop in the students knowledge of the process foundation theories philosophies and principles of education .

**CO2 :EDUCATIONAL PSYCHOLOGY:**Understanding with scientific principles and theories of education and with the different methods, theories of educational psychology .

**CO3: DEVELOPMENT OF EDUCATION IN INDIA :** To understanding the comparison between ancient and modern educational aspects.

**CO4 :SOCIOLOGICAL FOUNDATIONS OF EDUCATION:**Understanding the process of different social interaction and its relevance in education which are organization, culture, social problems in India etc.

**CO5:EMERGING ISSUES AND EDUCATION:** Students will understand various emerging issues in education like universalization of primary education, literacy programmes, women empowerment, Human Right, integration globalization, etc.

**CO6 :MEASUREMENT AND EVALUATION IN EDUCATION:** Students will be acquainted with terms of different educational measurement and importance of evaluation in the field of education.

**CO7:EDUCATIONALCHNOLOGY:**Students will get a knowledge with different types of technology and innovation in education through educational technology , computer and innovations of technology .

**CO8:ENVIRONMENTAL EDUCATION AND POPULATION EDUCATION :**To enable the students to understand the concept of environmental and population issues and solving problems.

**CO9:PHILOSOPHY OF EDUCATION:**To make students understanding a knowledge of the relationship between education and philosophical ideas like western philosophy , Indian philosophy and Democracy.

**CO10 :EDUCATIONAL THINKERS , ORIENTAL AND OCCIDENTAL:**

To enable the students to understanding the philosophy of different educational thinkers.

**CO11:TEACHER EDUCATION** To acquaint the learner with the concept, aims, scope and development of teacher education. They will also know about its importance of in-service and pre-service programmes with different organizations involved in teacher education.

**CO12 :TEACHING LEARNING METHOD AND PEDAGOGY :**To understand about the teaching learning process and its different aspects, principles, maxims and teaching models .Its helps the students to positive attitude towards the teaching profession.

**CO13 :STATISTICS IN EDUCATION:** The students will understand the basic concepts of statistics and different statistical procedures used in education

**.CO 14: PRACTICAL** will develop scientific attitude.

**CO15:** Development Psychology will help the students about basic concept of human development stages.

**CO16: CONTINUATION & DISTANCE** education will help the student to known about changing society

**CO17: SPECIAL EDUCATION** will help to know various provision of education for special education

**CO 18: GUIDANCE & COUNSELLING** will help the students to understand basic concept of guidance and counselling.

**CO 19: EDUCATIONAL MANAGEMENT & ADMINISTRATION** will help to understand basic concept of administration in state and India.

**CO 20: PROJECT PAPER** will help the student to formulate research in future also enhance their field study.

❖ **BA MAJOR AND GENERAL/RE (POLITICAL SCIENCE)**

**PROGRAMME SPECIFIC OUTCOME**

- **PSO 1**-Understanding the nature and developments in National and International politics.
- **PSO 2**-Analysing the Indian constitutional provisions, major legislations and reforms.
- **PSO 3**-Examining India’s foreign relations with her neighbors and great powers.
- **PSO 4**-Analysing the working of important international and regional organizations like UN, EU, ASEAN etc.
- **POLITICAL SCIENCE HONOURS (CBCS)**
- Programme Outcome and Course Outcome
- B.A (CBCS) Programme Specific Outcome:
- **PSO 1.** Understand the contribution of western political thinkers to political thought.
- **PSO 2.** Acquaint with the basic concept, principles and dynamics of Public Administration.
- **PSO 3.** Familiarize with important theories and issues of International Relation.
- **PSO 4.** Acquaint with diverse political system especially the developed countries including China and Switzerland.
- **PSO 5.** Understand the basic concepts and ideologies of Political science discipline.
- **PSO 6.** Understand the basic concept and issues concerning Human Rights and challenges.
- **PSO 7.** It makes to understand the inter connection between local, State, National, and International politics.
- **Course Outcome (Honors)**

Course Name	POL-HC-1016 -- UNDERSTANDING POLITICAL THEORY	Students learn about the idea of political theory, its history and approaches and an assessment of its critical and contemporary trends.
	POL-HC-1026— Governance; Issues and Challenges	Helps to understand the importance of governance in the context of globalized world, environment, administration, development.
	POL—HC—2016— Political Theory – Concepts and Debates	Students are familiarizes with the basic normative concepts of political theories. This course encourages critical and reflective analysis and interpretation of social practices through relevant theories.
	POL-HC-2026—Political process in India.	This course helps in understanding the political process of a society. It also helps students to understand the working of the Indian state, paying attention to the contradictory dynamics of modern state power.

	POL-HC-3016— Introduction to Comparative Government and Politics .	Understand different political aspects prevailing in different countries. Have the capacity to compare and analyses political system operating in different countries.
	POL-HC-3026— Perspective on Public Administration .	The students will be able to understand an over view of the discipline and how it is different from private administration. The students learn about major contemporary approaches in public administration.
	POL-HC-3036- Perspective on International relation and World History.	The students are given fundamental clarity about the historical evolution. It provides a fairly comprehensive overview of the major political developments and events starting from 20 <sup>th</sup> century.
	POL—HC-4016— Political Processes and Institution in Comparative Perspective.	Points out the basic features of govt. of UK, USA , Chaina and Switzerland and also specify definition, nature, scope of politics, different approaches to the study of comparative politics. Deals with different political groups and pressure groups.
	POL-HC—4026- Public Policy and Administration in India .	Provide an introduction to the interface between public policy and administration in India. It deals with issues of decentralization, financial management, citizen and administration and social welfare from a non-western perspective.
	POL—HC—4036— Global Politics.	It introduces students in the key debates on the meaning and nature of globalization by addressing its political, social, cultural and technological dimension. The course also offers insights into contemporary global issues such as the proliferation of nuclear weapon, ecological issues, international terrorism and human security.
	POL-HC-5016-Classical Political Philosophy .	This course familiarizes students with the manner in which the political questions were first posed. This is a basic foundation course for students.
	POL—HC—5026— Indian Political Thought -	This course introduces the element of Indian Political Thought. The course as

	-1	a whole is meant to provide a sense of in the broad streams of Indian thought while encouraging knowledge of individual thinkers.
	POL—HC—6016— Modern Political Philosophy .	Students will be exposed to the manner in which the questions of politics have been posed in terms that have implications for larger questions of thought and existence.
	POL—HC—6026— Indian political thought -- 11	This course introduces a wide spun of thinkers and themes that defines the modernity of Indian Political Thought.
	POL SEC 3024 Youth and Nation building	This course guides the students to be nation builders so that they can take initiative to develop the national community through Government programs like NSS, NCC program so that it remains politically stable and viable in the long run.
	POL SEC 4014 Panchayati Raj in practice	Describes the concept of Panchayati Raj and rural development, discusses about the concept of decentralization of power and peoples participation.
	POL DSE 5016 Human Rights	Students will understand the basic concept and issues concerning Human Rights and challenges.
	POL DSE 5046 Select Constitution	Points out the basic features of govt. of UK, USA , Chaina and Switserland and also specify definition, nature, scope of politics, different approaches to the study of comparative politics. Deals with different political groups and pressure groups.
	POL DSE 6016 Indian Foreign policy in Globalizing world	Discusses the origin and evolution of Indian foreign policy, determinants of Indian foreign policy, no-alignment in India's foreign policies, continuities and changes in Indian foreign policies.
	POL DSE 6036 Women power and politics	Students will learn about the feminist analysis of socio-cultural and institutional basis of women's oppression and how to overcome it.
	POL HG (GENERIC) 1016 Introducion to	Students learn about the idea of political theory, its history and approaches and an assessment of its critical and

	political theory	contemporary trends.
	POL HG (GENERIC)2016 Indian Government and politics	Deals with the Indian administration and cultural, social, political, economic and constitutional environment. Covers a various aspects of union and state administration.
	POL HG (GENERIC) 3016 Comparative Government and politics	Understand different political aspects prevailing in different countries. Have the capacity to compare and analyses political system operating in different countries.
	POL HG (GENERIC) 4016 Introduction to International Relations	The students are given fundamental clarity about the historical evolution. It provides a fairly comprehensive overview of the major political developments and events starting from 20 <sup>th</sup> century.

- **Course Outcome (Regular)**

Course Name	POL-RC-1016 Introduction to Political Theory	Students learn about the idea of political theory, its history and approaches and an assessment of its critical and contemporary trends.
	POL RC 2016 Indian Government and Politics	Understand different political aspects prevailing in different countries. Have the capacity to compare and analyses political system operating in different countries.
	POL RC 3016 Comparative Government and Politics	Students learn to compare different Government institutions and organisations prevailing in the country.
	POL SEC 3014 Parliamentary procedures and practices	This course helps students to understand generally accepted rules precedence and practices commonly employed in the governance of deliberative assemblies.
	POL RC 4016 Introduction to International Relations	The students are given fundamental clarity about the historical evolution. It provides a fairly comprehensive overview of the major political developments and events starting

		from 20 <sup>th</sup> century.
	POL SEC 4014 Youth and nation building	This course guides the students to be nation builders so that they can take initiative to develop the national community through Government programs like NSS, NCC program so that it remains politically stable and viable in the long run.
	POL SEC 5014 Panchayati Raj in practice	Describes the concept of Panchayati Raj and rural development, discusses about the concept of decentralization of power and peoples participation.
	POL RE DSE 5016 Public Administration	Provide an introduction to the interface between public policy and administration in India. It deals with issues of decentralization, financial management, citizen and administration and social welfare from a non-western perspective.
	POL RG(GENERIC) 5016 Public Administration	Provide an introduction to the interface between public policy and administration in India. It deals with issues of decentralization, financial management, citizen and administration and social welfare from a non-western perspective.
	POL SEC 6014 Citizens and Rights	Provide an introduction to various rights of citizens.
	POL RE DSE 6016 Public Administration 2	Provide an introduction to the interface between public policy and administration in India. It deals with issues of decentralization, financial management, citizen and administration and social welfare from a non-western perspective.
	POL RG (GENERIC) 6016 Public Administration 2	Provide an introduction to the interface between public policy and administration in India. It deals with issues of decentralization, financial management, citizen and

		administration and social welfare from a non-western perspective.
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## **B.A HONOURS AND GENERAL IN HISTORY (CHOICE BASED CREDIT SYSTEM-CBCS)**

### • **Programme Outcome**

1. Our college is committed to its students for learning and success. Educational process and outcomes are aimed at transformational learning that support students all round and holistic development. The college has stated Program outcomes, and course outcomes for History programs offered by our institution affiliated to Guwahati University.
2. Under graduate course in History (Honours and Regular) has an aims to understand the following goals
3. Student will be able to be able to learn a basic narrative of historical events in a specific region of the world
4. Student can distinguish primary and secondary sources.
5. Understand and evaluate historical ideas, arguments, and points of view.
6. Evaluate interpretations and multiple narratives of the past.
7. Student will be able to assess primary historical evidence.
8. Student will be able to compile a bibliography.
9. Student will acquire knowledge and skill to present clear and convincing arguments, based on critical analysis of diverse historical sources, and effectively communicate his interpretations in written or oral form.
10. Students will be able to develop a research question and complete a well-supported piece of historical writing.

### **Course Outcome: History (Choice Based Credit System-CBCS)**

#### **Semester I**

**HIS-HC-1016: HISTORY OF INDIA:** After the completion of this paper, the students will be able to explore and effectively use historical tools in reconstructing the remote past of ancient Indian pre and proto history. The course will also train the students to analyse the various stages of evolution of human cultures and the belief systems in the proto- history period.

**HIS-HC-1026 : SOCIAL FORMATIONS AND CULTURAL PATTERNS OF THE ANCIENT WORLD:** After the completion of this paper, the students will be able to explain the processes and stages of the evolution of the variety of cultural pattern throughout antiquarian periods in History. They will be able to relate the connections between the various Bronze Age civilizations in the ancient world as well as development of slave and polis societies in ancient Greece.

#### **SEMESTER II**

**HIS-HC-2016: HISTORY OF INDIA- II:** On successful completion of this course the students will be able to explain the economic and socio-cultural connections, transitions and stratifications during the ruling houses, empires and the politico-administrative nuances of early Indian History from 300 BCE to 300 CE.

**HIS-HC-2026 : SOCIAL FORMATIONS AND CULTURAL PATTERNS OF THE MEDIEVAL WORLD:** After the completion of this course, the students will be able to analyse and explain the historical socio-political, administrative and economic patterns of the medieval world. They will be able to describe the

emergence, growth and decline of various politico-administrative and economic patterns and the resultant changes therein.

**SEMESTER III: HIS-HC-3016: HISTORY OF INDIA III (750 -1206):**The completion of this paper will enable the students to relate and explain the developments in India in its political and economic fields and its relation to the social and cultural patterns therein in the historical time period between c.700 to 1206. They will also be able to analyse India's interaction with another wave of foreign influence and the changes brought in its wake in the period.

**HIS-HC-3026: RISE OF THE MODERN WEST : I:** On completion of this course, the students will be able to explain the major trends and developments in the Western world between the 14th to the 16th century CE. They will be able to explore and analyse the significant historical shifts and events and the resultant effects on the civilizations of Europe in the period.

**HIS-HC-3036: HISTORY OF INDIA IV (1206 - 1550):**After completion of this course students will be able to explain the political and administrative history of medieval period of India from 1206 to 1550 AD. They will also be able to analyse the sources of history, regional variations, social, cultural and economic set up of the period.

**Semester: IV**

**HIS-HC-4016 : RISE OF THE MODERN WEST : II:** After the completion of this course, the student will be able to explain the political and intellectual currents in Europe in the Modern Age. They will also be able to relate the circumstances and causal factors of the intellectual and revolutionary currents of both Europe and America at the beginning of the Modern age.

**HIS-HC-4026 : HISTORY OF INDIA V (1550 - 1605):**At the completion of this course, the students will be able to analyse the circumstances and historical shifts and foundations of a variety of administrative and political setup in India between c.1550-1605. They will also be able to describe the inter relationships between the economy, culture and religious practices of the period.

**HIS-HC-4036 : HISTORY OF INDIA VI (1605 - 1750):** After the completion of this course, the students will be able to explain and reconstruct the linkages of the history of India under the Mughal Rule. As a whole, this course will enable them to relate to the socio-economic and religious orientation of the people of Medieval period in India.

**Semester: V**

**HIS-HC-5016: History of Modern Europe- I ( 1780-1939):** After the completion of this course the students will be able to evaluate the historical evolution and political developments that occurred in Europe in the period between 1780 to 1939. They will also be able to critically analyse the evolution of social classes, nation states, evolution of capitalism and nationalist sentiment in Europe. They will also be able to relate to the variety of causes that dragged the world into devastating wars in the intervening period.

**HIS-HC-5026 : HISTORY OF INDIA VII (1780 - 1857):** After the completion of this course, the students will be able to relate the circumstances leading to the consolidation of colonial rule over India and their consequences. They will also be able to explain the orientation of the indigenous population and the masses towards resistance to the colonial exploitation. The course will also enable the students to analyse popular uprisings among the tribal, peasant and common people against the British policies.

**Semester: VI**

### **HIS-HC-6016 : HISTORY OF INDIA VIII (1857 - 1950)**

At the completion of this course, the learners will be able to analyse the course of British colonial exploitation, the social mobilizations during the period between c.1857 to 1950 and also the techniques of Indian resistance to British policies. It will also enable the students to explain the circumstances leading to de-colonization and also the initial period of nation building in India.

### **HIS-HC-6026: HISTORY OF MODERN EUROPE II (1780 -1939)**

After the completion of this course, the students will be able to analyse the historical developments in Europe between c.1780 to 1939. As the course structure of this paper focuses on the democratic and socialist foundations modern Europe, the students will be able to situate the historical development of working class movements, socialist upsurge and the economic forces of the two wars and the other ideological shifts of Europe in the period

#### **Discipline Specific Elective Courses**

#### **HIS –HE-5016: HISTORY OF ASSAM (UPTO 1228)**

This paper will give a general outline of the history of Assam from the earliest times to the advent of the Ahoms in the 13th century. Upon completion, students will be acquainted with major stages of developments in the political, social and cultural history of Assam during the early time

#### **HIS –HE-5026 : HISTORY OF ASSAM (1228 –1826)**

On completion of this paper, students will be able to identify major stages of developments in the political, social and cultural history of Assam during the medieval times. This paper will enable the student to explain the history of Assam from the 13th century to the occupation of Assam by the English East India Company in the first quarter of the 19th century.

#### **HIS –HE-6016 : HISTORY OF ASSAM (1826 – 1947)**

Upon completion of this course, students will be able to describe the period of British rule in Assam after its annexation by the imperialist forces. They will also be able to situate the development of nationalism in Assam and its role in India's freedom struggle. The course would enable the students to analyse the main currents of the political and socio-economic developments in Assam during the colonial period.

#### **HIS –HE-6026 : ASSAM SINCE INDEPENDENCE**

Students will be able to assess the aftermath of Partition and other socioeconomic developments in post-independence Assam upon completion of this course. They will also be able to identify the main currents of political and socio-economic development in Assam after India's independence and the causes and impact of various struggles and movements in contemporary Assam.

#### **Generic Elective Courses**

#### **HIS –HG-1016: HISTORY OF INDIA (FROM THE EARLIEST TIMES UP TO 1206)**

Upon completion of this course, students will be able to explain the emergence of state system in North India, development of imperial state structure and state formation in South India in the early period. They will be able to understand the changes and transformations in polity, economy and society in early India and the linkages developed through contacts with the outside world.

#### **HIS –HG-2016 : HISTORY OF INDIA (1206 to 1757)**

Upon completion of this course, students will be able to analyse the political and social developments in India between 1206-1757. Students will be able to explain the

formation of different States during this period along with their administrative apparatuses, and the society, economy and culture of India in the 13th to mid-18th century period.

**HIS –HG-3016 :HISTORY OF INDIA ( 1757 to 1947)**

Upon completion of this course, students will be able to understand the major factors that led to the establishment and consolidation of British rule in India. They will also be able to identify the process of growth of resistance against British colonial rule and the eventual growth of Indian nationalist movement, which ultimately led to the end of the British rule in the country

**HIS –HG-4016 : SOCIAL AND ECONOMIC HISTORY OF ASSAM**

Upon completion of this course, students will be able to analyse and explain the socio-economic history of Assam including among others the development of caste system, religious beliefs, agriculture and land system, the social organization, trade and commerce, various agricultural regulations, plantation economy, development of modern industries, transport system, education, the emergence of middle class, development of literature and press, and growth of public associations.

**Skill Enhancement Elective Courses**

**HIS –SE-3014: Historical Tourism in North East India**

After completing this course, students will be able to explain Tourism in North East India with special reference to the historical monuments, cultural and ecological elements and places of the north east India country as tourist and heritage sites of the nation. They will be able to relate to the growing vocation of tourism as an industry and the applicability of historical knowledge for its growth.

**HIS –SE-4014: Oral Culture and Oral History**

After this course the students will be able to explain complex interrelationships of structures or events in the context of broader social and cultural framework of societies through ‘public memory’ and use oral history to preserve oral culture and local history The students will be able to espouse the relevance to the north-eastern region of India with its diverse culture and ethnic communities whose history is largely oral. The students will be able to use ‘Public memory’ as a tool and a source not only to write public history but also to explore new knowledge in the humanities , social sciences and even in disciplines like architecture, communication studies, gender studies, English, history, philosophy, political science, religion, and sociology

❖ **B.A HONOURS AND GENERAL /RE IN GEOGRAPHY**

**1. PROGRAMME SPECIFIC OUTCOME**

Geography is a spatial science. It includes places, landscape, environment and people. The dynamic relationship between and among them are the main study. It covers natural as well as social sciences. The study of geography is significant to have better appreciation of the Earth surface as our home and have better understanding of its limitations.

**A program in geography provides many transferable skills –**

PO1	<ul style="list-style-type: none"> <li>• Cartographer- academic institution, DC office, Circle Office.</li> </ul>
PO2	<ul style="list-style-type: none"> <li>• Commercial Surveyor- Road networking agencies.</li> </ul>
PO3	<ul style="list-style-type: none"> <li>• Environmentalist / Environment consultant.</li> </ul>
PO4	<ul style="list-style-type: none"> <li>• Geographic information systems officer.</li> </ul>

PO5	<ul style="list-style-type: none"> <li>Town and country planner.</li> </ul>
PO6	<ul style="list-style-type: none"> <li>Planning and development officer.</li> </ul>
PO7	<ul style="list-style-type: none"> <li>Academician.</li> </ul>

### 3. Course outcomes B.A. in Geography-

Paper	Course	Outcome
GGY-HC - 1016	Geomorphology	The student will learn that the Earth is unstable and it is undergoing constant changes due to dynamic earth's process.
GGY-HC - 1026	Cartographic Techniques	Understanding the importance of various cartographic techniques in geographical study.

GGY-HC-2016	Human Geography	The paper will be useful for students in developing ideas on human environment issues that geographers usually address in anthropocene
GGY-HC-2026	Climatology & Biogeography	The paper will be useful for students in developing ideas on climate related aspects of geographical analysis

GGY-HC-3016	Economic Geography	The paper will develop ideas on how geographical aspects organize economic space & will offer perspectives to students if they wish to pursue a research programme.
GGY-HC-3026	Geography of India with special reference to North East-India	Useful for students in developing & understanding on Indian geography and its various dimensions.
GGY-HC-3036	Quantitative methods in Geography	Understanding of the statistical methods and techniques used in geographical studies
GGY-HC-3024	Thematic Cartography	General understanding of preparation of different types of plan and maps

GGY-HC-4016	Environmental Geography and Disaster management	This course will be useful for students in developing ideas on environmental issues that geographers usually address
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GGY-HC-4026	Population and Settlement Geography	To understand population and settlement pattern and analyses it spatially
GGY-HC-4036	Remote Sensing Techniques and GIS	This course is useful for students in developing skills in spatial data analysis if they wish to pursue a research programme

GGY-HC-5016	Regional Development and Planning	To understand and developing ideas on disparities within and between countries and their fallout
GGY-HC-5026	Field Techniques in Geography	This course will help students to proceed with a research problem and the steps she/he should adopt and the tools and craft to be employed which doing quality research
GGY-HG-5016	Climate Change: Vulnerability and Adaptation	The students will acquire knowledge and skill to detect the noticeable impacts of climate change in their vicinity
GGY-HG-5026	Social and Political Geography	Understanding concept of social and political issues of the societies

GGY-HC-6016	Geographical Thought	This course will be useful for students in understanding perspectives on the development and contemporary trends in geography and its systematic study
GGY-HC-6026	Geography of Resources and Development	Understanding of the basic concept of resource and its various types and their utilities
GGY-HE-6016	Geography of Health and Wellbeing	Understanding of the concept of human health in the context of geography of health
GGY-HE-6026	Hydrology and Oceanography	To learn and analyses hydrology of any area.

## UG PROGRAMME IN SCIENCES

❖ **B.SC HONOURS AND GENERAL /RE IN PHYSICS**

## **PROGRAMME SPECIFIC OUTCOME**

Physics explains the fundamental laws of the universe and introduces important concepts that are essential for advanced study of chemistry, biology and all other branches of science. It contributes to the technological infrastructure and provides trained personnel needed to take advantage of scientific advances and discoveries. Physics is an important element in the education of chemists, engineers and scientists.

The course is designed in such a way to form a formidable foundation to the undergraduate students to understand the basic concepts and give insights into day to day science activities, recent developments and experiences. The course provides flexibility serving as a stepping stone to advanced work in higher studies in related areas such as astronomy, engineering, material science, atmospheric science, environmental science and various fields. The course provides the basis for further study and enable students to follow new developments in science with heightened awareness and comprehension.

After completion of the course students can go for higher studies and pursue masters course in Physics or its allied branches nuclear physics, electronics, instrumentation, geophysics, radiological physics etc. They can further be engaged in research activities. A graduate student in physics can further after completion of higher studies prepare for competitive examinations which will help them in getting job in various government, private organizations and public sector units as pharmaceutical industry, teaching positions in various government and private organizations, scientific officers, technical assistants in various academic institutions, research laboratories etc, different positions in defence research laboratories, telecommunication sector, railway signal processing and management, aviation etc.

### **❖ B.SC ZOOLOGY HONOURS (CBCS)**

#### **ZOO-HC-1016:Non-chordates 1: Protista to Pseudocoelomates**

##### **CourseOutcome:**

1. Different groups of invertebrate animals are studied in this course including Protista, Porifera, Coelenterate, Platyhelminthes and Nematelminthes
2. General characters and classification upto order are studied.
3. Some special features, organs, pathogenecity, life history and significance are studied here.

#### **Non-chordates 1: Protista to Pseudocoelomates (PRACTICALS)**

1. Study of museum specimens:- The specimens are identified and classified for practical knowledge.
2. Prepared slides are studied in this part to understand the various structures of specimens.
3. Life cycle and pathogenecity of animals creates awareness among students.
4. Project helps students to understand the complexity of life cycle in animals.

## **ZOO-HC-1026 PRINCIPLES OF ECOLOGY**

1. Imparts knowledge to the student regarding various aspects of ecology, types of ecosystem, population and community characteristics and dynamics.
2. Gains knowledge in the areas of wildlife, biodiversity conservation and management
3. Gains understanding of wildlife, biodiversity and conservation Biology

### **PRINCIPLES OF ECOLOGY (PRACTICALS)**

1. Gains knowledge about environmental biology through the practical of estimation of DO in Water, CO<sub>2</sub>, PH etc
2. Visit to National Park/Biodiversity Park/Wild life sanctuary helps students to understand animals better.

## **ZOO-HC-2016 NON-CHORDATES II: COELOMATES**

Different groups of invertebrate animals are studied in this course including Annelid, Arthropoda, Onychophora, Mollusca and Echinodermata. Their general characteristics, classification and special features are studied.

### **NON-CHORDATES II: COELOMATES PRACTICAL**

- Specimen study is done
- Digestive system of invertebrates helps student to know the diversity of gut formation.
- Project on larval forms of animals enhance students knowledge.

## **ZOO-HC-2026 CELL BIOLOGY**

- Students get awareness about the size, shape and structure and function of cells and different cell organelles.
- This helps the students for a better understanding of cell and its cycle.
- Students also learn about cell signaling.

### **CELL BIOLOGY ( PRACTICALS)**

- Students get to know about mitosis, meiosis.
- They also learn about iDNA by Feulgen reaction, Mucopolysaccharides by PAS reaction and Proteins by Mercurio bromophenol blue/FastGreen

## **ZOO-HC-3016 DIVERSITY OF CHORDATA**

- Different groups of vertebrate animals are studied in this course including Protochordata, Hemichordata, Urochordata, Cephalochordata, Agnathostomata, Pisces, Amphibia, Reptilia, Aves and Mammalia.
- General characters and classification upto order are studied.
- Study of zoo-geography helps to learn about distribution of animals.

### **DIVERSITY OF CHORDATA (PRACTICAL)**

- Permanent slides help students to study sections of animals.
- Specimen study helps students to study diversity of animals.

### **ZOO-HC-3026 ANIMAL PHYSIOLOGY: CONTROLLING AND COORDINATING SYSTEMS**

- This unit helps students to understand about the various tissues, muscles, bones, endocrine system, reproductive system etc.

### **ANIMAL PHYSIOLOGY: CONTROLLING AND COORDINATING SYSTEMS (PRACTICALS)**

- Students learn about tissues, bones etc through permanent slides and also by preparing temporary slides.
- Students develop interest in preparing permanent slides through the process of microtomy.

### **ZOO-HC-3036 FUNDAMENTALS OF BIOCHEMISTRY**

- All the biochemical components of the body system are studied.
- It helps the student to get an idea about the chemical compositions of different chemical compounds such as enzymes, hormones and their secretions.
- It also includes the pathway and chemicals which are responsible for the energy production in our body.

### **FUNDAMENTALS OF BIOCHEMISTRY (PRACTICALS)**

- Students do qualitative tests on carbohydrate, proteins and lipids.
- They learn the process of chromatography.
- They also learn proteins separation by SDS-PAGE.

## **❖ B.Sc HONOURS AND GENERAL IN CHEMISTRY (CBCS)**

### **PROGRAMME OUTCOME**

#### **CORE COURSE**

#### **SEM-1:**

#### **CHE-HC-1014: (INORGANIC CHEMISTRY-I)**

On successful completion, students would have cleared understanding the concept related to atomic and molecular structure, chemical bonding, periodic properties and redox behavior of chemical species. Students will also have hands on experience of standard solution preparation and learn volumetric estimation through acid base and redox reaction.

#### **024: (PHYSICAL CHEMISTRY-I)**

In gaseous unit student will learn the kinetic theory of gases, ideal gas and real gases. In liquid state unit, the student are expected to learn the qualitative treatment of the structure of the liquid along with the physical properties of the liquid ,namely- vapour pressure, surface tension and viscosity. In

molecular and crystal symmetry unit they will be introduced to the elementary idea of symmetry. In solid state unit the student will learn the basic solid state chemistry application of X-ray crystallography for the determination of some very simple crystal structure. The student will also learn another important topic on ionic equilibria in this course.

#### **SEM-2:**

##### **CHE-HC-2014: (ORGANIC CHEMISTRY-I)**

Students will be able to identify different classes of organic compounds, their reactivities and mechanism along with stereochemical aspects.

##### **CHE-HC-2024: (PHYSICAL CHEMISTRY-I)**

In this course student will be able to learn laws of thermodynamics, thermochemistry, thermodynamic functions, relations between thermodynamic properties, Gibbs-Helmoltz equation, Maxwell equation etc. Moreover, the students are expected to learn partial molar quantities, chemical equilibrium, solution and colligative properties.

#### **SEM-3:**

##### **CHE-HC-3014: (INORGANIC CHEMISTRY-II)**

On successful completion students would have cleared understanding the concept of principle of redox chemistry in the understanding of metallurgical process. Students will be able to identify the variety of s-block and p-block compound and comprehend their preparation, structure, bonding, properties and uses. Experiments in this course will boost their quantitative estimation skills and introduced the students to preparative methods in inorganic chemistry.

##### **CHE-HC-3024: (ORGANIC CHEMISTRY-II)**

Students are expected to learn classification of organic compounds in terms of their functional groups and their reactivity.

##### **CHE-HC-3034: (PHYSICAL CHEMISTRY-III)**

The students are expected to learn phase rule AND ITS APPLICATION IN SOME SPECIFIC SYSTEM. They WILL Also learn rate laws of chemical transformation of experimental methods- SSA etc in chemical kinetics unit. Students will also be able to learn surface adsorption processes and the basic of catalysis including enzyme catalysis and acid base catalysis etc.

#### **SEM-4:**

##### **CHE-HC-4014: (INORGANIC CHEMISTRY-III)**

On successful completion students would be able naming of co-ordination compounds according to IUPAC. Bonding explanation in this class of compounds understand their various properties in terms of CFSE and predict reactivity.

Through the experiments students not only will be able to prepare, estimate or separate metal complexes and will also be able to design independently.

**CHE-HC-4024: (ORGANIC CHEMISTRY-III)**

Student shall demonstrate the ability to identify the classify different types N-based derivatives alkaloids and heterocyclic compounds and their structure, mechanism and reactivity.

**CHE-HC-4034: (INORGANIC CHEMISTRY-IV)**

In this course students will learn theories of conductance and electrochemistry. Student will understand some very important topics such as solubility products, ionic product etc. they are expected to learn various parts of electrochemical cells along with Faraday's Laws of electrolysis. Students will also gain basic theoretical idea of electrical and magnetic properties of atoms and molecules.

**SEM-5:****CHE-HC-5014: (ORGANIC CHEMISTRY-IV)**

Students will be able to explain or describe the important features of nucleic acids, amino acids, enzymes and develop their ability to examine their properties and applications.

**CHE-HC-5024: (PHYSICAL CHEMISTRY-V)**

After completion of this course the students are expected to understand the application of the quantum mechanics in some chemical system such as hydrogen atom or hydrogen like ions. They will be able to understand the basics of various kinds of spectroscopic technique and photochemistry.

**SEM-6:****CHE-HC-6014: (INORGANIC CHEMISTRY-IV)**

By studying this course the students will be expected to learn about ligands substitution and redox reactions take place in coordination complexes. Students will also learn about organometallic compounds, their bonding, stability, reactivity and uses. They will be familiar with the variety of catalyst based on transition metals and their application in industry. Students will also be able to appreciate the use of concepts like solubility product, common ion effect, pH etc.

With the experiments related to coordination compounds synthesis calculation of  $10Dq$ , controlling factor etc will make the students appreciate the concepts of theory in experiments

**CHE-HC-6024: (ORGANIC CHEMISTRY-V)**

Students will be able to explain the basic principle of different spectroscopic techniques and their importance in chemical analysis. Students will be able to classify or critically examine carbohydrates, polymer, and dye materials.

**CHEMISTRY- Discipline Specific Electives(DSE)****SEM-5:****CHE-HE-5014: (APPLICATIONS OF COMPUTER IN CHEMISTRY)**

After the completion it will help the students to interpret the laboratory data, curve fitting of experimental work also perform quantum mechanical calculations for various molecular models.

**CHE-HE-5024: ( ANALYTICAL METHODS IN CHEMISTRY)**

On successful completion students will have theoretical understanding about choice of various analytical techniques qualitative and quantitative characterization of samples. At the same time through the experiments students will gain hands on experience on the discussed techniques.

**CHE-HE-5034: (MOLECULAR MODELLING AND DRUG DESIGN)**

Students will be able to identify basic components of computer and programming as applied to computer assisted design and modeling of molecules.

**CHE-HE-5044: (NOVEL INORGANIC SOLIDS)**

After the completion, students will also opt for studying an interdisciplinary Masters programme with an emphasis on the synthesis and applications of various materials or take up of job in material production and processing industry.

**CHE-HE-5054: (POLYMER CHEMISTRY-IV)**

Students will learn the definition and classification of polymer, kinetics of polymerization, molecular weight of polymer, glass transition temperature etc. They also learn preparation structure and properties of some industrially important polymers.

**CHE-HE-5064: (INSTRUMENTAL METHODS OF CHEMICAL ANALYSIS)**

Students will be able to explain the theoretical basic of different analytical techniques and compare the result thereof.

**CHEMISTRY- Discipline Specific Electives(DSE)**

**SEM-6:**

**CHE-HE-6046: (RESEARCH METHODOLOGY FOR CHEMISTRY)**

They will be able to construct a rational research proposal to generate fruitful output in terms of publications and patents in the field of chemical science.

**CHE-HE-6014: (GREEN CHEMISTRY)**

Apart from introducing the principles of green chemistry, this course will make them conversant with applications of green chemistry to organic synthesis.

**CHE-HE-6024: (INDUSTRIAL CHEMICALS AND ENVIRONMENT)**

Students will get to know about industrial metallurgy and energy generation industry. They also learn about the industrial waste management, their safe disposal and the importance of environmental friendly, "green chemistry" in chemical industry.

**CHE-HE-6034: (INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE)**

This course will establish the foundation of industrial inorganic chemistry among the students.

**SKILL ENHANCEMENT:**

**SEM-3:**

**CHE-SE-3024: (IT SKILLS FOR CHEMISTS)**

It focus on skill development related to basic computer operation and information technology.

**CHE-SE-3034: (BASIC ANALYTICAL CHEMISTRY)**

Upon completion they shall be able to explain the basic principle of chemical analysis and analysed data following scientific methodology.

**CHE-SE-3044: (CHEMICAL TECHNOLOGY AND SOCIETY)**

They will be familiarized with the processes and terminology in chemical industry.

**CHE-SE-3054: (CHEMOINFORMATICS)**

Students would be able to explain ,interpret and examine the utility of computer and software ,tools in solving chemistry realted problems.

**CHE-SE-3064: (BUSINESS SKILL FOR CHEMISTS)**

Students shall be able to explain and analyze the important steps of business operations, finance, and intellectual property as applied to chemical industry.

**CHE-SE-3074: (INTELLECTUAL PROPERTY RIGHT [IPR] )**

After completion they will have depth understanding about the importance and types of IPR.

**SEM-4:**

**CHE-SE-4014: (ANALYTICAL CLINICAL BIOCHEMISTRY)**

Students will able to identify various molecules relevant to particular pathological condition and their protocols.

**CHE-SE-4024: (GREEN METHODS IN CHEMISTRY)**

They will be able to describe and evaluate chemical products and processes from environmental perspective.

**CHE-SE-4034: (PHARAMACEUTICAL CHEMISTRY)**

They will be able to drug development process.

**CHE-SE-4044: (CHEMISTRY OF COSMETICS AND PERFUME)**

They will learn about the preparation and chemistry involved with the production of different cosmetic

**CHE-SE-4054: ( PESTICIDE CHEMISTRY)**

Student will be able to explain or describe and critically examine different types of pesticides, their activity and toxicity.

**CHE-SE-4064: (FUEL CHEMISTRY)**

They will learn about the classes of renewable and non-renewable sources and about the composition of coal and crude petroleum etc.

❖ **B.Sc. HONOURS AND GENERAL /RE IN Mathematics:****Programme Specific Outcome:**

Mathematics is the study of topics such as quantity (number theory), structure (algebra), space (Geometry) and change (analysis). It has no generally accepted definition. It is the science that draws necessary conclusion. It gives us concepts which are essential in the advanced study for all branches of science.

The CBCS course of mathematics is designed in such a way that it gives the students the required basic concepts which will lead to think logically about the day to day activities that mathematics can explain. The course is so flexible that the student can take note and use it for advance work and resource purpose in that field. It also includes projects work which will built research spirit among the students.

After successful completion of this programme, the student will be able to explain the core idea and technique of mathematics, will be able to transmit mathematical ideas, can teach us the real value of mathematics in ground level, will be to investigate and solve unfamiliar maths problem and many more.

**Course Outcome of CBCS Mathematics:**

Papers	Course Outcomes
1. Algebra and Trigonometry	HC-1026: It gives the basic idea of Groups Relation, Function. HC-3026: Groups and pure mathematics HC-4036: To study the concept of Rings, Ideas HC-6016: Concepts of Matrices, Complex numbers are discussed elaborately.
1. Calculus	HC-1016: Different types of differentiation and its application in real life are discussed and many problems are solved HC-4016: It gives the idea to solve Integration using different methods.
1. Differential Equation	HC-2026: It gives us various methods to solve differential equations and its uses in various fields.

	HC=6026 Partial Differential Equation
1. Co-ordinate Geometry	HC-3036: It gives us the concept of lines distances, points in both 2-D and 3-D
1. Linear Algebra and Vectors	HC-5026: To Study the vector equation and its uses.
1. Real Analysis	HC-2016: It gives the idea of Pure mathematics such as convergence, limits, sequence, limits, functions etc.
1. Mechanics	HC-5126: To study the mathematical concept about the physical word like centre of Grevity, Moment of Inertial, Force, Fluids etc.
1. Probability	HC-5136: To study the concept of sample space, experiments, expectation, probability distributions and enhance their skills.
1. Optimization	CO1: To study the concept of optimizing the profit, to learn about transportation, assign tasks etc.
1. Spherical Trigonometry & Astronomy	HE-5226: To understand the astronomical processes and systems relating to sun, stars, day, night etc.
1. Number Theory	HC-5116: To study and understand the concept of numbers.
1. Computer Application	HE-5236: To learn to write programming using software's like C++, C etc.
1. Matric Spaces	HC-5016: To Understand the basic concept of metric space, open sphere, closed sphere, normed linear space, metric space etc.
1. Graph Theory	SE-3124: To study the concept of points, lines, its uses in various field and its starting.

**Program Specific Outcomes:**

**B.Sc. (ZOOLOGY)**

Student learns about the scientific classification, biosystematics, taxonomy and animal diversity. Students learn about different animals and their anatomical parts.

Students understand animal diversity including ecology and wildlife conservation and management. They get an idea of osteology as well as environmental biology.

Students recognized the relationship between structure and functions at different levels of  $\emptyset$  biological organization (e.g., molecules, cells, organs, organisms, populations, and species) for the major groups of animals.

Students also learn about embryology and genetics. They also learn about preparation of embryological slides.

Student understands about physiology of animals, biochemistry involved in various body functions, about immunology, and practically learns biochemical techniques.

In the last semester students understands animal behavior, their evolution and adaptation to various environments. They are acquainted with practical aspect applied biological sciences or economic Zoology such as sericulture, Apiculture, aquaculture, rDNA technology and medicine for their career opportunities.

### **1<sup>st</sup> Semester (Major)**

#### **Paper M-101: Biosystematics and taxonomy**

##### **Outcome**

- Student is able to understand the fundamental principles of systematic in which the animals are classified according to their characters.
- The theories to be followed for classification are also studied.

#### **Paper 102: Animal diversity (Non chordates)**

##### **Outcome**

- Different groups of invertebrate animals are studied in this course including Protozoa, Porifera, Coelenterate, Platyhelminthes, Aschelminthes, Annelida, Arthropod, Mollusca and Echinodermata.
- General characters and classification up to order are studied.
- Some special features, organs, pathogenicity, life history and significance are studied here.

#### **Paper 103: Practical**

##### **Outcome**

- Dissections of different systems of invertebrate animals are studied such as leech, cockroaches, pila, prawn etc.
- Temporary slides are prepared from different organs to study the details of their structures prepared by students.
- Prepared slides are studied in this part to understand the structures and arrangement of different muscular regions.
- Study of museum specimens:- The specimens are identified and classified for practical knowledge.

### **2<sup>nd</sup> Semester (Major)**

#### **Paper 201: Animal diversity (chordates)**

##### **Outcome**

- Different groups of vertebrate animals are studied in this course including Protochordata, Hemichordata, Urochordata, Cephalochordata, Agnathostomata, Pisces, Amphibia, Reptilia, Aves and Mammalia.
- General characters and classification upto order are studied. Some special features, organs, pathogenecity, life history and significance are studied.

### **Paper – 202: Ecology, Wildlife conservation and Management**

#### **Outcome.**

- Imparts knowledge to the student regarding various aspects of ecology, types of ecosystem, population and community characteristics and dynamics
- Gains knowledge in the areas of wildlife, biodiversity conservation and management
- Gains understanding of wildlife, biodiversity and conservation Biology

### **Paper 203: Practical**

#### **Outcome**

- Dissections of different systems of vertebrate animals are studied.
- Temporary slides are prepared from different organs to study the details of their structures.
- Prepared slides are studied to understand the structures and arrangement of different muscular regions.
- Study of museum specimens:- The specimens are identified and classified for practical knowledge.
- Bones and different types of skull of birds are studied.
- Gains knowledge about environmental biology through the practical of estimation of DO in Water, CO<sub>2</sub>, PH etc

### **3<sup>rd</sup> Semester (Major)**

#### **Paper 301: Comparative Anatomy and Histology**

##### **Outcome**

- In this segment the student learns about comparative structures of heart, and different systems of animals which give them a definite idea not only the structure but also the structural development of that organ and how they become modified according to their need and environment.
- Students learn about differentiation and organization of cells and maintenance of tissues. It helps to get a better idea about their structure and function.
- Study of different dye and stains help the student to get a practical knowledge of handling the tissues for microtomy studies. It helps them for laboratory preparations and expertise in laboratory techniques.

#### **Paper 302: Cell biology**

##### **Outcome**

- Students get awareness about the size, shape and structure and function of cells and different cell organelles.
- This helps the students for a better understanding of cell and its cycle.

### **Practical 303:**

#### **Outcome**

- Higher knowledge of practical applications of cellular components is studied.

### **4<sup>th</sup> Semester major**

#### **Paper: M-401 Developmental Biology**

#### **Outcome:**

- Student's gain Basic concepts of developmental biology, its aim and scope,
- Developmental processes of different animals such as Frogs, Chick embryo studied.

#### **Paper: M-402 Genetics**

#### **Outcome:**

- Students gain Knowledge about genetics, back cross and test cross, varieties of gene expressions.
- Students gain understanding about Linkage, Linkage map, Crossing over etc.
- Students learn about the concept behind genetic disorder, gene mutations-various causes associated with inborn errors of metabolism
- Students learn about genetic disorder, gene mutations and sex determination, Human genome etc.
- Understanding of genetic basis of evolution, human karyotyping and speciation.

#### **Paper: M-403 (Practical)**

#### **Outcome:**

- Students learn about the development of frog through prepared slides.
- Students gain practical knowledge about the whole mount preparation of chick embryos development which helps a student for a laboratory technician course.
- Gain understanding about the meiosis and mitosis stages of cell division, sex chromatin.

### **TDC Semester 5<sup>th</sup> (Major)**

#### **Paper 501: Animal physiology**

#### **Outcome**

- Students learn about various physiological functions of the body.
- It includes nutrition, Respiration, Circulation, body fluids, excretion, nerve physiology etc in which all structure, function, process and control are to be studied.

### **Paper 502: Biochemistry and bioenergetics**

#### **Outcome**

- All the biochemical components of the body system are studied.
- It helps the student to get an idea about the chemical compositions of different chemical compounds such as enzymes, hormones and their secretions.
- It also includes the pathway and chemicals which are responsible for the energy production in our body.

### **Paper 503: Endocrinology and immunology**

#### **Outcome**

- Students learn about the endocrine glands and their secretions.
- Students gain knowledge about hormones, their functional activity and regulations.
- Another part includes immunology which deals with a system of defence by some internal secretions antibody antigen reaction.

### **Paper 504: Biological techniques and biostatistics**

#### **Outcome**

- Biological studies need some equipments for analysis of different functions.
- In this chapter students understand about the quantitative and qualitative results.
- Students learn about the Statistics used in biology, their parameters, various methods of determination and its analysis.

### **Paper 505: Practical Physiology**

#### **Outcome**

- The syllabus covers the practical knowledge about blood and its analysis which helps a student for a laboratory technician course.

### **Paper 506: Biochemistry and Endocrinology**

#### **Outcome**

- The syllabus covers the practical knowledge about various biochemical tests and its analysis which helps a student for a laboratory technician course.
- Students also gain knowledge about Dissections and histological studies of different endocrine glands.

## **6<sup>th</sup> semester major**

### **Paper- M: 601 Animal Behaviour**

#### **Outcome:**

- Understand Animal behaviour and response of animals to different instincts
- Understand about knowledge of Ethology, behavioural equipments, behavioural patterns etc.
- Imparts the knowledge about developmental processes of different animals along with teratology.
- Gains knowledge in the areas of animal behavior and socio-biology.

### **Paper-M: 602 Evolution and Adaptation.**

#### **Outcome:**

- Explain how life might have originated on this planet
- Use cladistic analysis to better understand and explain the phylogenetic relatedness among organisms.
- Describe Darwin's theories and how the principles of natural selection can lead to speciation.
- Contrast alternate models for macroevolution and describe the major patterns in the fossil record.
- Relate broad patterns in the fossil record to major geological events and plate tectonic movement.
- Explain why organisms succeed best in their own natural environments.
- Explain the theory of evolution by natural selection which provides a model to describe adaptation takes place.

### **Paper –M: 603 Economic Zoology**

#### **Outcome:**

- Understands processes of fisheries, sericulture, apiculture, Lac culture along with crop pest management techniques..
- Gives knowledge of silk worm rearing, mulberry cultivation, pests and diseases associated with silk worm, mulberry and various process involved in silk production.
- It is an agro based cottage industry in India that enables them to get self-employment
- Sericulture is a comprehensive subject that gives in depth knowledge of the study of silkworms both physiological as well as commercial purposes including the various processes involved in the formation of silk.
- Students gain knowledge about various systems study of silkworms and cocoons, other defective cocoons
- Reeling and significant diseases seen in the silkworms
- Students feel confident in teaching Sericulture as well as executing research projects
- Aqua culture systems, induced breeding techniques, post harvesting techniques
- Also gain knowledge about pest, their types, control of pest etc.

- Understand basic concepts about pesticides and their Hazards.
- Helps students for entrepreneurship.

**Paper: M- 604 Biotechnology, Bioinformatics and Computer applications**

**Outcome:**

- Imparts the Knowledge to culture animal cells in artificial media.
- Knowledge of animal cells in culture, growth of cell lines
- Understanding of basic concepts of cell culture media preparation and cell harvesting system.
- Students gain skills in basics of computers, operating systems, overview of programming languages
- Application of internet and statistical bioinformatics in research.

**Paper M-605(Practical)**

**Outcome:**

- Students gain practical knowledge about identification of different varieties of silkworms.
- Students gain knowledge about identification of various commercially important fishes.
- Imparts practical Knowledge of slide preparation of different parts of honeybee.

**Paper M-606(Practical)**

**Outcome:**

Students gain knowledge about

- Make research proposal.
- Construct tool of data collection.
- Learn fieldwork modalities.
- Understand the process of data analysis.
- Writing research report

❖ **BSc HONOURS AND GENERAL /RE IN (BOTANY)**

**PROGRAMME OUTCOME:**

Students having Botany as major or general subject, gain knowledge of the nature around them. They become familiar with the diverse range of plants and their interactions with all other living beings including man. Since only the green plants have the capacity of synthesizing starch, the ultimate source of food material for all living beings, it is necessary for all to understand the importance of plants for the existence of life in the earth. The theoretical and practical knowledge of the plant sciences make the students aware of the utilization of plants and their products for human welfare and environment conservation. They also become more attached with the nature and understand the role played by the different plant groups in maintaining ecological balances.

Students opting for botany as a subject, get tremendous scope for higher studies in Botany, Agriculture, Horticulture, Forestry, Biotechnology, pharmacognosy, Virology and Bacteriology, Bioinformatics and so on. They can progress further in their careers and work as research scholars and scientists(in institute of natural and international repute), teachers, nutritionists, environmentalists, taxonomists, microbiologists, pharmacists, food technologists etc. they can also find employment in public sectors like- forensic study, Food Companies, Biological Supply Houses, Drug companies, Laboratory technicians etc. In government sector, students can get job in National Parks and wildlife Services, Social forestry and Environmental Protection, Plant Genetic Resources Lab, Forest Service etc.

### **PROGRAMME SPECIFIC OUTCOME:**

1. Understand the significance of plants in the living world, their diversity and conservation.
2. Acquire knowledge of pure and applied botany.
3. Understand the contribution of plants and their products in different fields covering food and nutrition, medicine, textile, oil, fibre etc.
4. Learn the basic concepts of environment and its relation to the living world.
5. Familiarizing with the distribution of plants in various phytogeographical regions at local, national and international levels.
6. Acquiring ideas about the origin and evolution of life on earth including the concepts of variation, adaptation, survival, natural selection, isolation and speciation.
7. Correlation of different tools and techniques for better understanding of different life processes.
8. Innovation of new methods of bringing improvement in meeting the food requirements of the growing world.
9. Learning recent trends of advance cytogenetics, informatics, biotechnology, molecularbiology, microbiology, physiology and plant biochemistry for imparting knowledge and research skills in the students.

### **COURSE OUTCOMES**

#### **B.Sc. BOTANY**

#### **B.Sc. SEMESTER I :**

#### **Paper M 101 (Theory) : Plant kingdom, Algae & Fungi :**

1. Understanding the diversity, forms, life span and ecological status of plant kingdom.
2. Knowing the diversity, morphology, life cycle patterns and economic importance of algae.
3. Learning the diversity in different groups of fungi.
4. Having knowledge of general characters, nutrition, reproduction and economic importance of fungi.
5. Knowledge of various forms of virus bacteria and Lichens.

#### **Paper M 102(Theory): Bryophytes and Pteridophytes :**

1. Knowing the diversity and phylogenetic relationships among the various groups of bryophytes.
2. Learning the morphology, anatomy and reproduction and economic importance of bryophytes.
3. Knowledge of classification and comparative study of morphology and reproduction in pteridophytes.
4. Understanding heterospory and seed habit in different types in pteridophytes.

**Paper M103 (Practical):**

1. Firsthand knowledge and study of the morphological and reproductive structure of algae, fungi, bryophytes and pteridophytes through diagrams, illustrations and slide preparations.
2. Identifying various forms of bacteria, virus and lichens from photographs/slides/specimens.

**B.Sc. SEMESTER II :**

**Paper M201 (Theory) : Gymnosperms, Paleobotany & Plant Anatomy :**

1. Understanding the floras of the past geological era and the internal structure and organization of the plants belonging to gymnosperms.
2. Knowing the comparative morphology, anatomy and reproduction of various types of gymnosperms.
3. Understanding the process of fossilization and knowing about the types of fossils.
4. Knowing about the internal structure and organization of the plants for anatomical studies.

**Paper M202 (Theory) : Cell Biology and Plant Biotechnology :**

1. Understanding the various aspects of cell and its components
2. Knowledge about the basis of genetical studies.
3. Understanding the basic principle of bio-chemistry.
4. Knowing the classification, nomenclatures and properties of enzymes.

**Paper M 203(Practical):**

1. Getting practical knowledge and ideas about the various types of gymnosperms and paleobotanical specimens.
2. Be able to prepare slides of various specimens studied.
3. Getting the knowledge of continuity of life and growth patterns by study and slide preparation of the cell division.

**B.Sc. SEMESTER III :**

**Paper M301 (Theory) : Ecology, Plant Geography and Evolution :**

1. Understanding various aspects of ecology and environment.
2. Knowing in detail about various ecosystems and their characteristics.
3. Learning the characteristics of population and community.

4. Being aware in dealing with various measure of controlling pollution in the environment.
5. Knowledge of different phytogeographical regions of India with respect to the vegetation of the different regions locally and globally.
6. Analyzing the mysteries surrounding origin of life on earth, evolution mechanisms and gene frequencies with respect to population.

**Paper M302 (Theory) : Instrumentation & Laboratory Techniques :**

1. This paper helps the students to understand instrumentation including microscopy, microtechniques, chromatography and laboratory techniques.
2. Use of camera lucida, hot air oven, incubators, autoclave, laminar air flow, centrifuge, ph meter etc.
3. The uses, principles and advantages of different methods of chromatography (Paper, TLC and column)
4. Demonstration of different types of instruments like spectrophotometer and their uses.
5. Basic principles of fixatives, stains, field museum and herbarium specimens and their preservation techniques.

**Paper M303 (Practical):**

Hands on experience obtained during the practical classes helps the students to understand the inter-relationship between the different components of the ecosystem. Students also learn to handle the instruments efficiently in their place of work, and laboratories.

**B.Sc. SEMESTER IV :**

**Paper 401(Morphology, Palynology, Embryology of Angiosperms) :**

1. Understanding angiosperms with relation to their origin and evolution, floral morphology and role of advanced morphology in plant classification.
2. Familiarizing the aspects and prospects of palynology and methods of studying pollen morphology, production and sterility.
3. Learning the basics of embryology, types of embryosacs and evolutionary significance.

**Paper M 402 : Plant taxonomy :**

1. Learning the objectives, principles and evolutionary trends in taxonomy.
2. Familiarizing with the plant classification systems, concepts of species, genus and family, nomenclature, modern trends in plant taxonomy.
3. Having knowledge of different families of dicotyledons and monocotyledons.

**Paper M403 : (Practical)**

Practical study of the pollen morphology has proved to be of great value in fields of taxonomy, forensic science and classification of plants.

**B.Sc. SEMESTER V :**

**Paper M 501 (Theory): Microbiology and Immunology**

This paper makes the students learn and understand the role of microorganisms in our daily life, the studies on immunology and general characteristics of virus, bacteria alongwith their importance.

**Paper M 502(Theory): Plant Pathology and lichen**

This paper deals with the different aspects of plant pathology including plant diseases, symptoms and control measure and plant disease management.

The study of lichens help in understanding pollution and lichens as a pollution indicator.

**Paper M 503 (Theory): Cytogenetics, Plant Breeding and Biometrics**

The students learning the basic concepts in cytology and genetics of both plants and animals. The knowledge of plant breeding can let the students dealing with genetic improvements of crops. The knowledge of biostatistics helps the students in various field of biology and statistical methodology, analytical research in genetics, plant breeding and other disciplines of life sciences.

**Paper M 504 (Theory): Applied Botany**

The study of this paper makes the students familiar with the knowledge on utilization of plants and microorganisms for human welfare. The students become aware of environmental aspects like differentiation and climate change. The application of breeding techniques and various methods of plant propagation are known to the course students.

**Paper M 505 (Practical): Microbiology, Plant Pathology and Lichens**

This paper includes the study and firsthand knowledge of

1. Gram staining of bacteria.
2. Preparation and sterilization of culture media.
3. Isolations of soil microorganisms, air microbes and fungal pathogens.
4. Pure culture techniques.
5. Counting of bacterial cells.
6. Thallus morphology of various lichens.

**Paper M 506 (Practical): Cytogenetics, Plant breeding, Biometrics and applied Botany**

1. Learn the practical aspects of karyotypes study, chromosomal aberrations, gene interactions and process of emasculation for plant breeding
2. Learn the calculation methods of mean, median, mode, standard deviation and stand error.
3. Knowledge of isolation of bacteria from root nodules and counting of pollen grains in honey samples.

**B.Sc. SEMESTER VI :**

**Paper M 601 (Theory): Molecular Biology and Plant Biochemistry**

1. The study of this paper enhances the knowledge of gene, genetic code, properties and evidences.

2. Learn thoroughly about DNA, RNA, exons, introns, transcription and translation in prokaryotes.
3. Knowledge of mutation and its types.
4. Understanding the biochemical processes of nitrogen metabolism, protein synthesis, enzymes and carbohydrate metabolism.

**Paper M 602 (Theory): Bioinformatics, Computer Application and Biotechnology**

1. Get a basic information of bioinformatics and its applications.
2. Basic knowledge of computer in biological sciences.
3. Enable to learn the history, scope and significance of biotechnology.
4. Having a detailed knowledge of plant tissue culture and plant genetic engineering.

**Paper M 603 (Theory): Plant Physiology**

This paper gives a thorough knowledge of the concepts and importance of plant physiology with the study of –

1. Plant soil water relationship.
2. Mineral nutrition and salt absorption.
3. Photosynthesis as a whole process.
4. Respiration in plants.
5. Translocation of organic solutes.
6. Growth and development.

**Paper M 604 (Theory): Plant Resource Utilization**

The paper enables the students to understand the concept of plant resource utilization and sustainable use of plant resources. The paper includes the study of

- a. Origin of cultivated plants.
- b. Beverages
- c. Fibres
- d. Timber and non timber plant resources.
- e. Pharmacognosy and its importance in medicinal plant uses.
- f. Ethnobotany and intellectual property rights.

**Paper M 605 (Practical):**

1. This practical paper helps the students to have hands on training on methods of protein estimation, separation and identification of amino acids presents in plant extracts, sugar estimation, paper chromatography, TAN estimation and nitrogen estimation.
2. Knowledge and practices of preparing slant, knowledge of micro propagation, genetic engineering techniques, construction of restriction map, study of different bio fertilizers, aseptic seed germination, study of different bio fertilizers and homology modeling through the BLAST.
3. Understanding the practical utility of bioinformatics in preparing databases, sequence alignment, homology and phylogenetic tree.

4. Utility of computer applications.

**Paper M 606 (Practical):**

1. This practical paper includes the study of various physiological experiments and processes related to plasmolysis, water potential, transpiration, imbibitions, respiration and chromatography.
2. The students are also acquainted with the chemical tests for tannins, pharmacognosial studies and histochemical tests.

❖ **B.COM HONOURS AND GENERAL /RE IN COMMERCE**

**PROGRAMME OUTCOME**

**PO1.**To give a general understanding of the concepts, principals, theories and arguments of specific areas of study above the core disciplines of economics, business and commerce.

**PO2.**Establish a broad knowledge and understanding of selected fields of study in the core programme of the study, with an thorough perceptive in at least one of these fields.

**PO3.**To participate positively in self directed study and research and have a consistent commitment to learning.

**PO4.**Concern towards various issues and problems of society and thereby contributing through understanding the various aspects within and outside the core programme.

**PO5.**Identification,evaluation,and resolution of complex problems through various critical and analytical skills and methods and to do so from the standpoint of specialized knowledge generated in at least one specific commerce discipline.

**PO6.**Describe the key and primary concepts and theories and institutional arrangements describing the operations and performance of Modern economics.

**PO7.**Enables students to qualify for employment in a wide range of occupation.

**PO8.**Making independent in the learning and responding in a critically process informed manner to innovative ideas, research findings, methodologies and theoretical frameworks in their specialised field of study.

**PO9.**Describe and use the existing theories, concepts and findings from the social sciences to adequately manage people and organizations for the full range benefit of organizational stakeholders.

**PO10.**To inculcate an ability in both written and oral formats to train the students in communication skills effectively.

**PO11.**Encourage and appreciate the participation in national and international debates and discussions on economic, commercial and global issues of business.

**PO12.** Developing interpersonal skills, exercising teamwork to accomplish a common goal and moulding the students to work proficiently and productively in groups.

**PO13.** Graduates are able to appear for higher studies like MBA, M. Com, etc and successfully pursue professional courses like chartered accountant, company secretary, cost accountant etc.

**PO14.** Graduates are prepared to work as an accountant, Finance officer, Auditor, Consultant, Business Analyst, Tax Consultant, stock broker, business analyst, economist, business development trainee etc.

**PO15.** B.Com graduates are entitled to have myriad of job opportunities like business consultancies, accounting firms, foreign trade, merchant banking, marketing, investment banking, inventory control etc.

### **PROGRAMME SPECIFIC OUTCOME**

**PSO1.** Equip the students with a various managerial skills and enhance the understanding of students in diversified fields like finance, accounting, management and taxation, the B.com course is designed.

**PSO2.** Make the students understand different subjects like economics, finance, indirect tax, management, laws, HRM, business statistics, marketing management, financial management etc to hold a B.Com degree.

### **COURSE OUTCOME**

#### **C/O 101- BUSINESS MATHEMATICS**

The main aim of this paper is to make the students familiar with the fundamental knowledge of mathematics as applicable to Business Economics.

#### **C/O 101 FUNDAMENTALS OF INSURANCE**

To acquaint the students with the concept of insurance, Life insurance, General Insurance, Insurance organization and negotiator

#### **C/O 102 FINANCIAL ACCOUNTING-I**

The objective is to give basic concept of Accounting Information, GAAP, Accounting Standards, Hire Purchase System, Self-Balancing System and Royalty Accounts Systems.

#### **C/O 103 BUSINESS ORGANIZATION & ENTREPRENEURSHIP DEVELOPMENT**

To acquaint about the different aspects like MNCs, Business combinations, Entrepreneurship, promotion of a new venture and role of Entrepreneurs in socio- economic development

#### **C/O 104 INDIAN FINANCIAL SYSTEM**

Know about different aspects of Indian financial system, financial markets, financial institutions, and regulatory frameworks.

#### **C/O 105-A COST ACCOUNTING**

To give a basic concept of cost like material cost, labour cost, overhead process and contract costing integral and non-integral accounting system.

### **C/O 105-M HUMAN RESOURCE MANAGEMENT**

Purpose is to make understand about the nature and scope of Human Resource Management (HRM), Recruitment, Selection, Job Evaluation, Wages, Salary, Administration and impact of globalization on HRM.

### **C/O-202 FINANCIAL ACCOUNTING-II**

Familiarized about international financial reporting standard, valuation of goodwill and accounting standards, Branch Accounting, Departmental Accounting, and dissolution procedure of partnership firms and its various accounting methods

### **C/O 203 PRINCIPLES OF MANAGEMENT**

To impart knowledge about management thought, Planning, Decision Making, Forecasting, Organizing, Departmentation, Span of Management, Authority and Responsibility, Motivation, Leadership, Communication, Control and Management of Change.

### **C/O 204 BUSINESS STATISTICS**

The chief goal of this paper is to introduce students to basic statistical methods with a focus on the application of these methods to the business world.

### **C/O 205 A MANAGEMENT ACCOUNTING**

Know about the importance of management accounting in decision making, marginal costing, cost volume profit analysis, standard costing and variance analysis and budget control system.

### **C/O 205 M HUMAN RESOURCE PLANNING DEVELOPMENT**

The give basic concepts about nature and scope of Human resource planning, Human resource development, employee training, executive development, career planning, performance appraisal and measurement of Human resource planning.

### **C/O 303 CORPORATE ACCOUNTING**

The objective of this paper is to give the students the basic concepts of how to prepare the final accounts of companies, amalgamation of companies, Right shares, Bonus shares, Buy back of shares, issue and redemption of debentures and its accounting treatment.

### **C/O 304 DIRECT TAXES**

Learn about income tax act 1961, heads of income, Assessment procedure and wealth act 1957.

### **C/O 305 CORPORATE LAWS**

To make the students understand about introduction of companies, financial structure, membership, company management, company Director and meetings.

### **C/O 306 A ADVANCED CORPORATE ACCOUNTING**

To acquaint the students about valuation of shares and internal reconstruction, profit or loss prior to incorporation, winding up of companies and holding companies and its accounting procedures.

### **C/O 306 M INDUSTRIAL RELATION AND LABOUR LAWS**

To learn about concept of industrial relations, industrial disputes, settlement machinery, Trade union act 1926, industrial employment, Factories act 1948, Payment of bonus act 1956, Payment of wages act 1936 and miscellaneous legislations.

### **C/O 401 BUSINESS ECONOMICS**

To introduce students with demand analysis, introduction of business economics, production function, cost analysis, market structure and price determination and factor pricing.

### **C/O 402 AUDITING AND ASSURANCE**

To know about concepts of auditing, internal control system, audit sampling, audit procedures and audit report.

### **C/O 403 INDIRECT TAXATION**

To enable the students to learn about the newly implemented Goods and Services Tax law of the country and provisions related to it.

### **C/O 404 FINANCIAL SERVICES**

Familiarize students about financial services, leasing and hire purchase, Merchant banking, Mutual funds and innovation of financial services.

### **C/O 405 A ADVANCED ACCOUNTING**

To know about the final accounts preparation regarding Banking and Insurance companies, Investment Accounts and insurance claims procedures.

### **C/O 405M COST AND MANAGEMENT ACCOUNTING**

To make the students understand about cost sheet, material cost, overhead, labour cost, standard costing, cash flow and fund flow statement, ratio analysis and application of management accounting.

### **C/O 501 BUSINESS ENVIRONMENT**

Learn about emerging issues and challenges in business at the national and international level in the light of the policies of liberalization and globalization.

### **C/O 502 MARKETING MANAGEMENT**

Know about the basic concepts of marketing and its significance which enables to suitable marketing strategies for development in real life situations

### **C/O 503 FINANCIAL MANAGEMENT**

To acquaint students about significance of financial management, investment decisions, concept of working capital management, capitalization and dividend decisions.

#### **C/O 504 REGULATORY FRAMEWORK IN BUSINESS-I**

To learn about Indian Contract Act 1872, the Sale of Goods Act 1930, Assam Co-operative Society Act 1949.

#### **C/O 505A FINANCIAL STATEMENT ANALYSIS**

To give vivid knowledge about statutory rules followed in preparing financial statements and its analyzing techniques and preparation of fund flow and cash flow statement.

#### **C/O 505 M CUSTOMER RELATION AND RETAIL TRADE MANAGEMENT**

To acquaint the students with the concept of customer relation management, building customer relationship, CRM process, meaning of retail management and its significance.

#### **C/O 601 INFORMATION TECHNOLOGY IN BUSINESS**

To learn about the concept of computer and its significance in business.

#### **C/O 602 MARKETING OF SERVICES**

To make the students know the significance that services in the new business era.

#### **C/O 603 MODERN BANKING PRACTICE**

To learn about the concept of banks, its types, NPA, bank-customer relationship negotiable instruments and preparation of bank balance sheet.

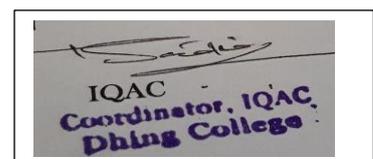
#### **C/O 604 REGULATORY FRAMEWORK IN BUSINESS-II**

To give the concept about Right to information act 2005, Indian Partnership Act 1932, Consumer Protection Act 1986 and FEMA act 1999 and some special acts.

#### **C/O 605 PROJECT REPORT**

The objective of this paper is to help the students to acquire the conceptual knowledge of research and methodology and process of preparing the project

**NB: Prepared by Academic Committee of Dhing College and approved by IQAC for onward upload in College web portal.**



**Date: 03/04/2021**

**For IQAC Cell**