



OFFICE OF THE PRINCIPAL

PRAGJYOTISH COLLEGE

[Affiliated to Gauhati University and
recognized under Sections 2(f) and 12(B) of the U.G.C. Act, 1956]

GUWAHATI – 781 009, ASSAM

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Website: www.pragjyotishcollege.ac.in

1. The file below contains the PO, CO AND PSO of the respective departments in whole.
2. The PO, CO AND PSO in whole is provided in the following link as well: <https://pragjyotishcollege.ac.in/iqac/naac-dvv/>



(Dr. Manoj Kumar Mahanta)
Principal



GAUHATI UNIVERSITY

W. No. 207443 (0000)
C. No. 207443 (200-10)
Gyapani, Bakhali, Naga
GUWAHATI - 781004
www.guhati.ac.in

No. GU/PT/2019/119552

Date: 27/10/19

From: Prof. Nasir Gopal Mahanta M.A. (JNU, UC Berkeley), Ph.D. (G.U.)

Registrar,
Gauhati University

TO WHOM IT MAY CONCERN

This is to certify that Pragjyotish College, Guwahati, Assam, Pin- 781009 is affiliated to the Gauhati University and recognized by the University Grants Commission and the following Courses are taught in the college as per approval.

Sl. No.	Name of the Course(s) and Duration	Affiliation		Period of Validity for the course
		Professional	Temporary	
1	Five Years Course Engg. (M.E. Aerospace, M.E. Design, M.E. Heat Transfer, Mechanical, Electrical, Instrumentation, Polymers, Biotech, Robotics, IT and Soft Skill)	Permanent		2014-20
2	Five Years Course B.Tech. Aerospace, Aerospace Medical Section, Polymers, IT and Robotics and Soft Skill	Permanent		2014-20
3	Three Years Course Physics, Chemistry, Mathematics, Geography, History, Zoology and Computer	Permanent		2014-20
4	Three Years Course Physics, Chemistry, Mathematics, Statistics and Computer	Permanent		2014-20
5	Two Years Course International Accounting		Temporary	2014-20
6	Two Years Course Economics, History, Anthropology and Sociology	Permanent		2014-20
7	Two Years Course Economics	Permanent		2014-20
8	Two Years Course Agriculture, Management, Finance and Computer	Permanent		2014-20
9	Two Years Course IT and IT-ET	Permanent		2014-20
10	Two Years Course Computer Science, AIT, IT and IT-ET	Permanent		2014-20
11	Two Years Course B.Tech. Zoology and Computer Science	Permanent		2014-20
12	Two Years Course B.Tech. IT and IT-ET	Permanent		2014-20
13	Two Years Course Agriculture and IT	Permanent		2014-20
14	Two Years Course B.Tech. IT	Permanent		2014-20

(Signature)
Registrar
Gauhati University

Weblink of the programmes offered by the college

<https://pragjyotishcollege.ac.in/academics/programs-and-courses/>



DEPT. OF ACCOUNTANCY
PROGRAMME SPECIFIC OUTCOME
B.COM WITH ACCOUNTANCY AS HONOURS

1. To build a strong foundation in Accounting
2. To prepare the students for a variety of career option in accounting field.
3. To prepare students to enter masters program like M.com, MBA MBE etc.
4. To prepare & motivate students to enter professional masters program like CA, CMA, C.S. etc.
5. To develop critical thinking in students regarding accountancy.
6. To equip students with skill and knowledge to excel in their future career through accounting practices.
7. To develop entrepreneurial skill in students.
8. To have an understanding of determination of total income, tax payable and GST & VAT etc.

COURSE OUTCOME

B.Com. 1st semester

1. Financial accounting 1 (general paper) Paper- 102

- a. To familiarized the students with accounting principles and practices of various types of business other than company.
- b. To have an understanding regarding Royalty
- c. To familiarize with self balancing and sectional balancing

2. Cost accounting (major paper) Paper - 105

- a. To familiarized the students with cost concept
- b. To acquaint the students with different method & technique of costing
- c. To make the students learn the fundamentals of cost accounting as a separate system of accounting
- d. To enable the students to identify the method and technique applicable for different types of industries.

B.com 2nd semester

1. Financial accounting II (general paper) paper- 201

- a. To familiarized the students with accounting standards & practices.
- b. To have an understanding regarding branch accounting polices & practices
- c. To familiarize the students with goodwill calculation practices & departmental accounting.
- d. To provide proper knowledge regarding partnership.

2. Management accounting(major paper) paper - 205

- a. To equip the students to interpret the financial statement.
- b. To enable the students understand accounting method and techniques for business decision making
- c. To enable the students to have a thorough knowledge on management accounting technique in decision making.
- d. To provide through undertaking of price level.
- e. To provide students advance knowledge in management accounting tools like ratio analysis, fund flow & cash flow analysis etc.



B.Com 3rd semester

1. Corporate accounting (general paper) paper – 303

- a. To provide a thorough knowledge about the accounting of companies.
- b. To enable the students for preparing final account of companies and the amalgamation technique
- c. To provide a versatile knowledge regarding shares, stocks, Buy back procedure and incentive equity etc.
- d. To provide a details knowledge regarding issue and redemption of debenture

2. Direct tax (general paper) 304

- a. To provide a thorough knowledge regarding the concept of tax & income tax.
- b. To familiarized the students with various Income tax words, terms & condition.
- c. To familiarized the students with IT act and enable them to compute taxable income of various heads of Income tax Act 1961
- d. To provide an insight of regarding e-filing of Income tax return.
- e. To enable the students to plan & manage income tax
- f. To have an understanding of total income and tax payable and to get an overview regarding return to be filed by an individual and also assessment procedure and technique.

3. ADVANCE CORPORATE ACCOUNTING (MAJOR PAPER) 306

- a. To provide an insight to how to calculate profit prior to incorporation as well as the method of calculating goodwill.
- b. To enable them to learn internal reconstruction of the companies
- c. To familiarized them with the knowledge of holding company and the procedure of winding up of companies.

B.com 4th semester

1. AUDITING & ASSURANCE (GENERAL PAPER) 402

- a. To familiarized the students with the principle and procedure of auditing.
- b. To enable the students the students to understand the duties & responsibilities of auditor
- c. To know about a thorough understanding of different types of audit work.

2. INDIRECT TAXATION (GENERAL PAPER) 403

- a. The objective of this course is to provide an understanding the concept of VAT scheme & GST
- b. it helps in focusing the students the benefit and procedure of GST calculation and the procedure of GST registration for a dealer.

3. ADVANCE ACCOUNTING (MAJOR PAPER) PAPER 405

- a. To know the method and procedure of insurance company and insurance claim
- b. To enable and familiarized with government investment and accounting.
- c. To familiarized students with banking companies and their working method of preparing financial statement



B.COM 5TH SEMESTER

1. ADVANCE FINANCIAL STATEMENT ANALYSIS (MAJOR PAPER) PAPER 505

- a. To familiarized students with the introduction of financial statement and its statutory requirements.
- b. To provide the techniques of financial statement analysis and its limitation for preparation.
- c. To enable the students to know about the preparation of statements of changes in financial position including its merits and demerits.

B.COM 6TH SEMESTER

1. PROJECT WORK AND VIVA

- A. HERE THE ALL THE MAJOR STUDENTS ARE LEARN HOW TO PREPARE PROJECT REPORT SUPERVISED BY THEIR RESPECTIVE TEACHERS.
- B. TO FAMILIARISED THE STUDENTS WITH THE RESEARCH METHODOLOGY.

DEPT. OF ACCOUNTANCY

COMMERCE STREAM

PRAGJYOTISH COLLEGE

SANTIPUR, GUWAHATI, ASSAM

FACULTY TEACHERS –

1. MANISHA DUTTA BARUAH (PH- 95089 – 55953)
2. UDDIPTA NAYAN MEDHI (HOD) (PH - 98542-15286)
3. MANOJIT KALITA (PH -73991-71193)
4. BINTI DIHINGIA (PH- 94352-71588)



DEPARTMENT OF ANTHROPOLOGY

PRAGYOTISH COLLEGE

GUWAHATI-9

(PROGRAMME OUTCOMES AND COURSE OUTCOMES)

Session: 2019-20

Programme Outcomes: The programme enabled the UG level students of Anthropology to introduce and understand the concept of Anthropology and develop interest in the ability to apply the theories and thought of the subject. To understand the inter-disciplinary nature of Anthropology students will be aware of the fields in Anthropology. and variation, social and cultural aspect of man, prehistoric life ways of man. The aim of the programme is to impart essential theoretical knowledge of biological Anthropology such as basics of human evolution and variation, social and cultural aspect of man. The course help to know the applications of anthropology and developing the problem solving aptitude of the students.

COURSE OUTCOMES

PAPER NO.	COURSE	OUTCOMES
ANT-HC-1016	Introduction to Biological Anthropology	The course gave knowledge about the uniqueness of the different branches of Anthropology as well as about the anthropological knowledge of the contemporary world. Besides that the students will learn about the genetics and development of biological aspects of mankind such as human anatomy, anthropometry etc. which ultimately helps to trace the origin and evolution of mankind.
ANT-HC-1026	Introduction to Socio-Cultural Anthropology	The Course is meant to study the conceptual and theoretical knowledge of social-cultural anthropology along with practical knowledge of data collection and interpretation.



ANT-HC-2016	Archaeological Anthropology	The course helps to know the prehistoric and archaeological background of evolution, variation and continuity of human society and culture. Moreover students will learn about the stages of human evolutionary and the fossil finds, archaeological background of prehistoric and historical cultures through tool technology and pottery technology.
ANT-HC-2026	Fundamentals of Human Origin and Evolution	The course is providing to impart the conceptual and theoretical knowledge of the evolutionary stages of man and the evolutionary development. Moreover students will learn on about the fossil finds on the basis which the evolutionary stages of man on the basis of which the evolutionary n stages of mankind are identified.
ANT-HC-3016	Tribes and Peasants in India	The course helps to identify about the anthropological knowledge of tribes, villages and peasantry of India and policies by the government to address the problems, prospects and development of the tribes, village and peasantry. For ethnographical knowledge students will prepare a field- report on critical analysis of tribe and peasant of contemporary available resources.
ANT-HC-3026	Human Ecology: Biological and Cultural Dimensions	The course is helpful in knowing about the human adaptation in the ecological setting and on urbanization and industrialization process .The students will learn about the various modes of human adaptation and the bio-cultural adaptation to environmental influence of heredity. .



ANT-HC-3036	Biological Diversity in Human Population	Its a course about the science of biological diversity in human population The student will learn about markers for understanding biological diversity for classifying human races .
ANT-HC-4016	Theories of Culture and Society	The aim of the course is to study culture and society especially theoretical perspective of culture such as evolutionary theory, diffusion, historical particularism functionalism, cultural and personality, neo-evolution etc. As a part of practical exercise student will collect data and analyse it for proper understanding of the subject.
ANT-HC-4026	Human growth and Development	It's a course about the science of growth of human from foetus into man. Besides that student will study the concept related with growth and different stages of growth including bio-culture factors that influence growth and development, human body composition. The student should be trained to assess growth status of individual.
ANT-HC-4036	Research Methods	The students will get a basic understanding on research design formulation, field work tradition, methods and techniques of data collection and ethics of research. The student will learn about application of methods and techniques of data collection, the ethics of research for an effective study.
ANT-HC-5016	Human Population Genetics	The students will get training in understanding about the mechanism which create variation in gene frequencies and how ecological factors help for maintaining gene frequencies. Besides that students will also learn about ABO blood grouping, Testing colour blindness and PTC test.



ANT-HC-5026	Anthropology in Practice	The course is designed to learn about the history and development of Anthropology in India, the ethnic elements of North East India and the diversity in India. Besides that the students will visit a NGO and write a project report.
ANT-HC-6016	Forensic Anthropology	The course aims an advanced study of the forensic aspect of Anthropology. Students will learn about distinguishing human and non-human skeletal remains and the techniques of personal identification. Besides that students will learn about estimation of age, sex and stature from bones, somatometric, somatoscopic, and examination of fingerprint and hand writing.
ANT-HC-6026	Anthropology of India	The course is meant to understand the social, linguistic and ethnic dimension of Indian society constantly acting on it over the years. The student will be familiar with the Anthropological situation of the country.



Course and Programme Outcomes of PG (Assamese)

ASM 1016: Rise and Development of the Assamese Language

1. Reconstruct the social history of Assam in the light of the rise of Assamese language.
2. Justify the relationship between tradition of religion and formation of Assamese language.
3. Compare and contrast the social history of early Assamese form of language with that of the Modern Assamese language.

ASM 1026: History of Assamese Literature: 1889-2015

1. Trace the phases of Romantic and Modern Assamese literature.

ASM 1036: Study of Culture of Assam

1. Reconstruct religious belief of the people of Ancient Assam and compare it with that of the rest of ancient India.

ASM 1046: History of Sanskrit Literature: History, Features and Genres

1. Trace the history and heritage of Indian literary tradition.
2. Describe the features of Sanskrit Literature which is considered as the mother of all regional Literature including Assamese.
3. Grasp the Indianness in Indian Literature.

ASM 1054: Creative Writing

1. Compare and contrast the genres of creative writing on the basis of imitation and imagination.
2. Create a piece of literature and justify its quality.
3. Describe the experience of reading a piece of literature.

ASM 2016: Assamese Poetry: 1889-2015

1. Categorise Assamese poetry (1889-2015) in groups of Romantic and Modern Phases.
2. Describe experience of reading Romantic and Modern Assamese Poetry.
3. Tell the difference between Romantic and Modern Poetry. Plan to develop intellectual history of Assam with the help of knowledge of stone inscriptions and copperplates.
4. Enumerate the institutions and describe their role in preserving Assamese culture.

ASM 2026: Assamese Prose: 1846-2015

- 1 Trace the development of Assamese prose from 1846 to 2015.
2. Interpret the changes occurring in Assamese prose.
3. State the present features of Assamese prose.

ASM 2036: Assamese Drama and Performance: 18

1. Reconstruct the history of Assamese drama and performance since 1857.
2. Describe the experience of viewing a play
3. Enumerate the trends of Assamese Drama since 1857.

ASM 2046: Indian Criticism

1. Describe the Indian systems of evaluating Literature.
2. Trace the thought systems of ancient Indian Literary critics.
3. Interpret Literature from Indian point of view.



ASM 2054 Editing

1. Trace the phases of book history in India.
2. Critique a manuscript.
3. Tell the philosophy behind the book-editing

ASM 3016: Assamese Novel: 1890-2015

1. Categorise the Assamese novels into different trends.
2. Explain the effects of the socio-political development on Assamese novels.
3. Design a spectrum of different themes used in Assamese novels.

ASM 3026: Translation: Theory and Practice

1. Illustrate the linguistic and cultural aspects of translation.
2. State the problems of different kinds of translation.
3. Justify the quality of different texts of translation.

ASM 3036: World Literature

1. Trace the development of different trends of World Literature.
2. Interpret Romanticism, Modernism and postmodernism with the help of related texts.
3. Critique a piece of Romantic / Modern/ Postmodern and Sanskrit Literature.

ASM 3046 Ethnic Literature of North-East India

1. Trace the development of various ethnic literatures of NE India.
2. Critique the documentation and presentation of ethnic literatures of NE India.
3. Explain the linkage between ethnic literature and modern literature.

ASM 3056 Sanskrit Texts

1. Critique the Classical Sanskrit Texts.

ASM 3066 Varieties of the Assamese Language

1. Describe different varieties of the Assamese Language in the context of contemporary Linguistics.
2. Organize geographical and social varieties of Assamese Language.

ASM 3076 Contact Languages of North-East India

1. Understanding the history of language contact and its impacts
2. Illustrate the contact language scenario of North-East India.

ASM 3086: Modern Indian Literature

1. Illustrate the concept of Modern Indian literature and trace its history.
2. Describe the national and regional aspects of Modern Indian literature.
3. Interpret a few major Modern Indian texts in original or translation.

ASM 3096 Assamese Vaisnavite, Saiva and Sakta Literature

1. Categorise religious literature of Assam and compare Assamese Vaisnavite literature with Assamese Saiva –Sakta literature.
2. Elaborate the concept of Vaishnavism, Saivism and Saktism and Organize literary products under titles like Vaishnava, Sakta, and Saiva literature.
3. Interpret religious beliefs i.e. Vaishnava, Saiva and Sakta with keeping in mind their humanitarian outlook.
4. Generate human values out of the religious outlook prevalent in Assam.



ASM 3106 Structure of the Assamese Language

1. Describe the intricate structure of the Assamese Language.
2. Analyse language in sync with contemporary linguistics.
3. Design a synchronic study of the structure of Assamese Language.

ASM 3116 Phonetics

1. State practical knowledge of phonetics in the light of computational Linguistics
2. Describe the phonological aspect of Assamese Language.

ASM 3126: Sankaradeva Studies

1. Justify the philosophy of Eksarana Nama Dharma by Sankaradeva in relation to All India Medieval Bhakti Movement.
2. Produce a one act play as the structure laid by Sankaradeva's Ankia Bhaona.
3. Trace the outcome of social reformation done by Sankaradeva.

ASM 4016: Textual Criticism and Manuscript Reading

1. Explain the Manuscript tradition in different part of the world.
2. Explain mutilated text is restored.
3. Generate interest in preservation and restoration of intellectual heritage of a nation

ASM 4026: Applied Linguistics

1. Explain computational linguistics.
2. Plan to review literature applying discourse analysis.
3. State the tools for analyzing the Assamese language.

ASM 4036: Peripheral Genres of Assamese Literature

1. Trace the development of a few peripheral genres in Assamese literature.
2. Explain the emotional effects of reading a piece of travelogue/biography/autobiography/literature for children/scientific fiction.
3. Critique a piece a travelogue/biography/autobiography/literature for children book

ASM 4046: Assamese Short Story:1889-2015

1. Trace the development of the major trends of Assamese short stories.
2. Describe the emotional effect of reading a few significant Assamese short stories.
3. Interpret a short story.

ASM 4056: Comparative Studies of Indo-Aryan Languages

1. Rearrange the evolution of the Assamese language and compare it with other language.
2. Enumerate the common heritage of the Indian-Aryan languages.
3. Contrast the linguistic variation of Assamese with other Pan Magadhan languages.

ASM 4066: Language Acquisition

1. Explain the process of first language acquisition
2. Explain the role of different factors making impact in second language acquisition.
3. Compare between the first and the second language acquisition.

ASM 4076: Aspects of Multilingualism

1. Justify the significance of study of language use in a multilingual context.
2. Draw a linguistic map of Assam showing bilingual and multilingual area.



ASM 4086: Western Literary Criticism

1. Interpret classicism, Romanticism Modernism, Structuralism, Post-Structuralism and Feminism with the help of a few selected texts.
2. Compare and contrast different movements in criticism.
3. State the effects of western literary criticism on critiques of Assamese literature.

ASM 4096: Assamese Criticism

1. Grasp the history and trends of Assamese criticism.
2. Trace the influence of western and Indian criticism on Assamese criticism.
3. Produce a criticism of a text.

ASM 4106: Trends in Linguistics

1. Elaborate semiotics and pragmatics by grasping contemporary theories.
2. Enumerate stylistic elements in a literary text.
3. Reconstruct Assamese Grammar drawing insights from the TG Grammar.

ASM 4116: Tibeto Burman Languages

1. Illustrate the Linguistics features of Tibeto Burman Language of Assam.
2. Trace the differences among Rabha, Boro, Mising, Karbi communities and compare the Tibeto Burman Languages with Assamese and other Indo-Aryan Language.
3. Describe the influence of Tibeto Burman Language on the Assamese Language and vice-versa.

ASM 4126: Language Study in Assam

1. Mapping the history of language study in Assam
2. Compare the view points of different Assamese linguists and their impacts.

ASM 4136: Culture Studies of North-East India

1. Enumerate the changes in material culture and performing Art with special reference to Moran, Hajong, Sonowal-Kachari, Garo and Manipuri.
2. Justify the role of women in the context of greater Assamese society and culture.
3. Justify the culture of North-East India as synthesized one.



G.U. TDC BENGALI (Hons. & Pass) SYLLABUS 2010

PROGRAM OUTCOME

- **Objectives:**

Educate students in both the artistry and utility of the Bengali language through the study of literature.

Provide students with the critical faculties necessary in an academic environment, on the job, and in an interdependent world.

Graduate students, who are capable of performing research, analysis and criticism of literary texts from different historical periods and genres.

Assist students in the development of intellectual flexibility, creativity and cultural literacy, so that they may engage in life-long learning.

- **Outcomes:**

Students should be familiar with representative literary and cultural texts within a significant number of historical, political, geographical and cultural contexts.

Students should be able to apply critical and theoretical approaches to the reading and analysis of literary and cultural texts in multiple genres.

Students should be able to identify, analyze, interpret and describe the critical ideas, values and themes that appear in different literary texts.

Students should be able to write analytically in variety of formats including descriptive writing, research papers and reflective writing.

Students should be able to ethically gather and synthesize informations from a variety of written and electronic sources.

Students should be able to synchronise technology with literature.

পাঠ্য বিষয়ের ঐঙ্গিত ফলাফল (Course Outcome)

A) TDC (ARTS) Hons. + Bsl

১। **মধ্যযুগের সাহিত্য ১** Paper 1.1 > বাংলা সাহিত্যের ক্রমবিকাশের পরিচয় লাভ সাহিত্যের শিক্ষার্থীদের কাছে অত্যন্ত গুরুত্বপূর্ণ। সেই ক্রমবিকাশের পথে মধ্যযুগের সাহিত্যধারা সম্পর্কে জ্ঞানার্জনের লক্ষ্যপূরণে এই পাঠক্রম তৈরি করা হয়েছে। শিক্ষার্থীরা এখানে মুকুন্দরামের চণ্ডীমঙ্গল ও ভারতচন্দ্র রায়ের অন্নদামঙ্গল কাব্যের সঙ্গে পরিচিত হবে।

২। **মধ্যযুগের সাহিত্য ২** Paper 1.2 > বাংলা সাহিত্যের ক্রমবিকাশের পরিচয় লাভ সাহিত্যের শিক্ষার্থীদের কাছে অত্যন্ত গুরুত্বপূর্ণ। এই পরিচয়ের দ্বিতীয় পর্বে বৈষ্ণব পদাবলি, চৈতন্য জীবনীকাব্য 'চৈতন্যভাগবত' কাব্য বিষয়ে জানবে। বাঙালির সমাজ, ধর্ম ও সাহিত্যধারার বিবর্তনের গতিরেখা অনুধাবন করতে পারবে এই পাঠক্রম সম্পূর্ণ করার পর।

৩। **স্মৃতিকথা** Paper 2.1 > বাংলা সাহিত্যের জনপ্রিয় ধারাগুলোর মধ্যে অন্যতম হল জীবনী, আত্মজীবনী ও স্মৃতিকথা। বর্তমান পাঠক্রমে শিক্ষার্থীরা এই ধারা সম্পর্কে একটি সুনির্দিষ্ট ধারণা গড়ে তুলতে পারবে। ব্রাহ্ম আন্দোলনের অন্যতম পুরোধা ব্যক্তিত্ব শিবনাথ শাস্ত্রী ও বাংলার স্বাধীনতা আন্দোলনের বিশিষ্ট সংগ্রামী নেতা উপেন্দ্রনাথের ব্যক্তি জীবনের একটি বিশেষ পর্বকে জানার সঙ্গে সঙ্গে বঙ্গদেশের সমাজ ও ব্রাহ্ম আন্দোলনের প্রভাব আর উপেন্দ্রনাথ রচিত স্মৃতিচিত্রে ভারতের স্বাধীনতা সংগ্রামের এক বিশেষ সম্পর্কেও জ্ঞান লাভ করবে।



৪। **শিশু সাহিত্য** Paper 2.2 > বাংলা শিশু-কিশোর সাহিত্যের সুগভীর ঐতিহ্য রয়েছে। বর্তমান পাঠক্রমে এই বিশেষ সাহিত্য ধারার বৈশিষ্ট্য জানার সুযোগ রয়েছে। শিশুমনে উদ্ভট রস ও রোমাঞ্চ রসের আকর্ষণ চিরকালীন। অবনীন্দ্রনাথের বুড়ো আংলা ও বিভূতিভূষণ বন্দ্যোপাধ্যায়ের ‘মরণের ডঙ্কা বাজে’ গ্রন্থ পাঠ করে শিক্ষার্থীরা বাংলা শিশু সাহিত্যের এই রস সম্পর্কে জ্ঞানার্জন করবে।

৫। **বাংলা সাহিত্যের ইতিহাস (প্রাচীন ও মধ্যযুগ) ও বাংলা সাহিত্যের ইতিহাস (আধুনিক যুগ)** Paper 3.1 & Paper 3.2 > বাংলা ভাষা ও সাহিত্যের উদ্ভবের কাল থেকে বিভিন্ন ধারার সঙ্গে শিক্ষার্থীদের পরিচয় ঘটবে এই পাঠক্রমে। সাহিত্যের রসাস্বাদনের পর এর প্রধান প্রধান ধারাগুলো সম্বন্ধে একটি স্পষ্ট ধারণা দেবে এই পাঠক্রম।

৬। **বাংলা ভাষার ইতিহাস ও ছন্দ-অলঙ্কার** Paper 4.1 > সাহিত্যের শিক্ষার্থী হিসাবে বাংলা ভাষাতত্ত্ব, ধ্বনিতত্ত্ব ও শব্দতত্ত্ব সম্পর্কে ধারণা থাক জরুরি। এই পাঠক্রম সেই লক্ষ্যপূরণে সমর্থ। তাছাড়া সাহিত্যের শিক্ষার্থীদের কবিতার ছন্দ, অলঙ্কার এবং ভারতীয় কাব্যতত্ত্ব সম্বন্ধে জ্ঞান থাকা আবশ্যিক। এই পাঠক্রম সেই প্রয়োজনীয়তা স্বীকার করে। এই পাঠক্রম তাদের কাব্যবোধ ও রুচিকে গড়ে তুলবে।

৭। **বাংলা কবিতা** Paper 4.2 > কাজী নজরুল ইসলামের কবিতা আর নির্বাচিত আধুনিক কবিতা পাঠের মাধ্যমে আধুনিক সময়ের জটিলতা, ব্যাষ্টি ও সমষ্টির দ্বন্দ্ব, প্রাচীন ও নবীনের সংঘাত, নরনারীর প্রেম-সঙ্কট ইত্যাদি সম্পর্কে জ্ঞানার্জনের সুযোগ রয়েছে বর্তমান পাঠক্রমে। আধুনিক জীবনযাত্রার নানা প্রবণতা সম্পর্কে শিক্ষার্থীদের ধারণা গড়ে উঠবে। বিশেষ করে আধুনিক বাংলা গীতিকবিতা সম্পর্কে সম্যক জ্ঞান অর্জন করবে।

৮। **উপন্যাস** Paper 5.1 > বাংলা উপন্যাস সাহিত্যের দুই দিকপাল শরৎচন্দ্র চট্টোপাধ্যায় ও তারাশঙ্কর বন্দ্যোপাধ্যায়ের দুটি উপন্যাস এখানে পাঠ্য। এই উপন্যাস দুটি পাঠের মাধ্যমে আধুনিক বাংলা সাহিত্যে উপন্যাস শিল্পের গতিপ্রকৃতি সম্পর্কে শিক্ষার্থীদের ধারণা তৈরি হবে।

৯। **গল্প** Paper 5.2 > সাহিত্যের ছাত্র-ছাত্রীদের ‘জঁর’ (Genre) বা সংরূপ সম্বন্ধে জানতে হয় বিভিন্ন। ছোটগল্প বাংলা সাহিত্যের তেমনি একটি গুরুত্বপূর্ণ সংরূপ। আধুনিক বাংলা ছোটগল্পের অন্যতম রূপকার সুবোধ ঘোষ এবং আরও কয়েকজন লেখকের ছোটগল্প পড়া ও বিশ্লেষণের মাধ্যমে ছাত্র-ছাত্রীরা এই সংরূপ সম্বন্ধে বিশেষ জ্ঞান অর্জন করতে পারবে।

১০। **নাটক** Paper 5.3 > সাহিত্যের ছাত্র-ছাত্রীদের বিভিন্ন ‘জঁর’ (Genre) বা সংরূপ সম্বন্ধে জানতে হয়। নাটক বাংলা সাহিত্যের তেমনি একটি গুরুত্বপূর্ণ সংরূপ। বাংলা সাহিত্যে এই সংরূপটির একটি গুরুত্বপূর্ণ ধারাবাহিকতা আছে। স্বদেশী যুগে দ্বিজেন্দ্রলাল এবং নবনাট্য আন্দোলনের যুগে তুলসি লাহিড়ি এই ধারাবাহিকতায় অন্যতম মাইলস্টোন। নাটক যদিও দৃশ্য কলার অন্তর্ভুক্ত, তবু ছাত্রছাত্রীরা আলোচ্য নাটক দুটি পড়ে ও বিশ্লেষণ করে এই সংরূপ সম্বন্ধে বিশেষ জ্ঞান অর্জন করতে পারবে।

১১। **ভ্রমণ সাহিত্য** Paper 5.4 > বাংলা সাহিত্যের দুই বিশেষ ভ্রমণ পিপাসু ব্যক্তিত্ব রবীন্দ্রনাথ ও সঞ্জীবচন্দ্র চট্টোপাধ্যায়ের দুটি বিখ্যাত রচনা এখানে পাঠের অন্তর্ভুক্ত হয়েছে। ছাত্রছাত্রীরা এই পাঠটি পড়ে বাংলা ভ্রমণ সাহিত্যের আঙ্গিক বিষয়ে জানার পাশাপাশি লেখকের প্রত্যক্ষ অভিজ্ঞতার সঙ্গী হয়ে ভারত তথা ভারতের বাইরের মানুষজন-সংস্কৃতি সম্বন্ধে জ্ঞান লাভ করবে।

১২। **প্রবন্ধ** Paper 5.5 > উনিশ শতকে সমালোচনা সাহিত্যের সূচনা হবার সঙ্গে সঙ্গেই সংরূপ হিসাবে প্রবন্ধ-সাহিত্য বাংলাদেশে গুরুত্ব পেতে শুরু করে। বিদ্যাসাগর সুললিত গদ্যে রস-প্রবন্ধ সাহিত্যের সূচ-বললে অতুল্য হয় না। তেমনি সৈয়দ মুজতবা আলি আধুনিক যুগে এ-জাতীয় রচনাকে পুষ্টি দিয়ে



ধারাবাহিকতা তথা ব্যক্তিগত প্রবন্ধ রচনার বিষয়, আঙ্গিক ইত্যাদি সম্বন্ধে জানতে আলোচ্য পাঠটি ছাত্রছাত্রীদের সাহায্য করবে।

১৩। **অতিরিক্ত গদ্য সাহিত্য** Paper 5.6 > এই পাঠে অন্তর্ভুক্ত হয়েছে মূলত বাংলা রসরচনা। বঙ্কিমচন্দ্রের সুবিখ্যাত রচনা ‘কমলাকান্তের দপ্তর’ এবং পরশুরাম রাজশেখরের অনবদ্য সৃষ্টি ‘কঙ্কলী’ থেকে নির্বাচিত পাঠ অবলম্বনে ছাত্রছাত্রীরা বাংলা রসরচনার স্বরূপ সম্বন্ধে জানবে।

১৪। **রবীন্দ্রনাথ ১** Paper 6.1 > বাংলা সাহিত্যের শিক্ষার্থীদের কাছে রবীন্দ্রনাথ ঠাকুর প্রবাদপ্রতিম ব্যক্তিত্ব। এশিয়া মহাদেশে সাহিত্যের প্রথম নোবেল প্রাপক এই কৃতি ব্যক্তিত্বের সৃষ্টিরাজিকে সংক্ষেপে পরিক্রমা করে নেবার সুযোগ আছে এই পাঠক্রমে। মূলত রূপক নাটক রচয়িতা এবং অসংখ্য কাব্য-কবিতার রূপকার রবীন্দ্রনাথ এখানে শিক্ষার্থীদের কাছে প্রতিভাত হবেন।

১৫। **রবীন্দ্রনাথ ২** Paper 6.2 > বাংলা সাহিত্যের শিক্ষার্থীদের কাছে রবীন্দ্রনাথ ঠাকুর প্রবাদপ্রতিম ব্যক্তিত্ব। এশিয়া মহাদেশে সাহিত্যের প্রথম নোবেল প্রাপক এই কৃতি ব্যক্তিত্বের সৃষ্টিরাজিকে সংক্ষেপে পরিক্রমা করে নেবার সুযোগ আছে এই পাঠক্রমে। মূলত বাংলা ছোটো গল্পের স্রষ্টা ও উপন্যাসের রূপকার রবীন্দ্রনাথ এখানে শিক্ষার্থীদের কাছে প্রতিভাত হবেন।

১৬। **সাহিত্য সমালোচনা** Paper 6.3 > সাহিত্যের নানা সংরূপের (Genre) আঙ্গিক ও প্রকাশভঙ্গি সম্পর্কে জ্ঞানার্জনের পাশাপাশি শিক্ষার্থীরা সমালোচনা সাহিত্যের বিবর্তন সম্পর্কেও অবহিত হতে পারবে। শিক্ষার্থীরা সাহিত্যের আঙ্গিক সম্বন্ধে ধারণা গঠন করে সমালোচক হিসাবে নিজেদের গড়ে তুলতে সক্ষম হবে। তাছাড়া প্রাচ্য কাব্য সমালোচনা এবং পাশ্চাত্য সাহিত্য সমালোচনা – এই দুয়েরই জ্ঞান অর্জনে সক্ষম হবে।

১৭। **প্রতিবেশী সাহিত্য** Paper 6.4 > ভারতীয় সাহিত্য চর্চা সম্পর্কে জ্ঞানার্জন এই পাঠক্রমের উদ্দেশ্য। বাংলা সাহিত্যকে জানার পাশাপাশি সমকালীন ভারতীয় সাহিত্য, বিশেষ করে অসমিয়া, ওড়িয়া সাহিত্যের নির্বাচিত পাঠে এ-সম্পর্কে প্রাথমিক ধারণা গড়ে উঠবে ও শিক্ষার্থীদের তুলনামূলক অধ্যয়নে আগ্রহ তৈরি হবে।

১৮। **অসমের বাংলা সাহিত্য** Paper 6.5 > ভারতের উত্তরপূর্বে বাঙালিদের বসবাসের একটি প্রাচীন ইতিহাস রয়েছে। পরিস্থিতির সঙ্গে খাপ খাইয়ে, এতদঞ্চলের পরিবেশ তথা মানুষজন, সংস্কৃতি, রাজনীতি ও ভৌগোলিক অর্থনীতির একটি বিশেষ পরিসর বাংলা সাহিত্যে গড়ে দিতে কবি, কথাসাহিত্যিক ও নাট্যকারেরা সক্ষম হয়েছেন। শিক্ষার্থীরা নির্বাচিত পাঠ অবলম্বনে তাকে জানার সঙ্গে সঙ্গে এই অঞ্চলের সাহিত্য নিয়ে গবেষণার অবকাশকে সমৃদ্ধ করতে পারবে।

১৯। **সাহিত্য প্রকল্প বা সন্দর্ভ লিখন** Paper 6.6> শিক্ষার্থীদের সাহিত্যিক গবেষণা সম্পর্কে আগ্রহ গড়ে তোলার পাশাপাশি বিভিন্ন বিষয়-ভাবনাকে সূষ্ঠ ও নির্দিষ্ট নিয়ম মেনে বিশ্লেষণ করতে সাহায্য করবে। আধুনিক বাঙালির চিন্তা-চেতনার বাহক হিসাবে বাংলা সাময়িক পত্রের ভূমিকা সম্বন্ধে গভীর অধ্যয়নের পাশাপাশি কথাসাহিত্যের গতিপ্রকৃতি নিয়ে নিজস্ব মতামত গড়ে তুলতে সক্ষম হবে।

B. TDC (Arts) MIL :

১। **কাব্য Course 1**> নির্বাচিত পাঠ অবলম্বনে শিক্ষার্থীরা কথা ও কাহিনি মূলক কবিতার ভূমিকা সম্বন্ধে জানবে। বাংলা কবিতার প্রাচীন কাল থেকে আধুনিক সময় পর্যন্ত আখ্যান কবিতা বা গীতি কবিতা কীভাবে রচিত হয়েছে সে-সম্বন্ধে জানবে।

২। **উপন্যাস ও গল্প Course 2**> বাংলা উপন্যাস সাহিত্যের স্রষ্টা বঙ্কিমচন্দ্র এবং ছোটোগল্পের শিল্প লেখক বনফুল এখানে পাঠ্য। এঁদের রচনা পড়ে ছাত্রছাত্রীরা বাংলা উপন্যাস ও গল্পের স্বাদ গ্রহণ করবে



এবং এই দুই প্রকার সাহিত্য সম্পর্কে আগ্রহী হবে। রচনার শিল্প কুশলতা তাদের বাংলা উপন্যাস ও গল্পের প্রতি আকর্ষণ গড়ে তুলবে।

৩। প্রহসন ও নাটক **Course 3**> এই পাঠটি পড়ে শিক্ষার্থীরা দৃশ্যকাব্যের বিভিন্ন রূপ সম্পর্কে অবহিত হবে। তাছাড়া উনিশ শতকীয় রক্ষণশীল সমাজ আর ঐতিহাসিক ঘটনা সমৃদ্ধ কাহিনি কীভাবে নাটকের বিষয় হয়ে ওঠে, সে-সম্বন্ধে জানবে।

৪। প্রবন্ধ, রচনা ও ব্যাকরণ **Course 4**> এই পাঠটি শিক্ষার্থীদের বাংলা ভাষা জ্ঞান বৃদ্ধির সঙ্গে সঙ্গে গঠনমূলক দৃষ্টি গড়ে তুলতে সাহায্য করবে। লেখার অভ্যাস গড়ে ওঠার পাশাপাশি মুজতবা আলির প্রবন্ধ পড়ে ভ্রমণ সাহিত্য কীভাবে লিখতে হয় সেসম্বন্ধে জানবে।



Bodo Department

Programme outcome:

PO 1: The course in Bodo will inculcate in the Bodo students an appreciation of Bodo literature. Through a study of Bodo Poetry, Drama, Novel, Short Story and Prose. it will provide skill in creative writing.

PO 2: Students will gain competence over the Bodo language will be able to enhance their communicative skill.

PO 3: After completion of this course students will gain information about Bodo Literature, culture and tradition.

Course outcome:

CO 1: It introduces students Bodo Patriotic, Nature, Modern Poetry.

CO 2: It deals with modern poetry.

CO 3: Students will attain knowledge about origin and development of Bodo Drama.

CO 4: It gives knowledge about Bodo literature and culture through a study of Bodo prose.

CO 5: It introduces race and tribes of Assam, culture integration and assimilation of Bodo and non -Bodo, folk religion, customs, folk festival, folk customs, folk –performing Art etc.

CO 6: It introduces western and eastern literary criticism.

CO 7: Here students will gain knowledge a brief history of Poetry, Drama, Novel, short story and Prose.

CO 8: It provides history of Bodo language about Phonology, Morphology, Syntax, and Semantics.



Pragjyotish College
Department of Botany
Programme: B.Sc. Botany

Programme Outcomes (PO)

- PO1. Knowledge and understanding:** 1. Diversity of plants in terms of structure, function, reproduction and ecological roles. 2. The evaluation and assessment of plant diversity. 3. Plant systematics and classification including flora of India and major biomes of the world. 4. The role of plants in the functioning of the global ecosystem. 5. Application of Statistics in biological data. 6. Application of computer and bioinformatics- utilization of biological data *in silico*.
- PO2. Intellectual skills – able to:** 1. Logical interpretation of ideas and concepts into a organised form. 2. Accumulate and organise knowledge and ideas through reading and searching in internet. 3. Transformation of knowledge based concepts from one area to another within the subject. 4. Plan hypothesis and test. 5. Propose and carry out independent survey or research in various areas of the subject.
- PO3. Practical skills:** Giving opportunities to students to conduct experiments practically both in field and laboratory. Hands on practical helps the students to gain proficiency and skills in different topics of modules offered to them. 1. Study of plant morphology and anatomy. 2. Character correlation for Plant identification. 3. Study of structure and composition of vegetations. 4. Photo-chemical analyses of plant materials to establish the presence of various chemicals with reference to plant physiology and biochemistry. 5. Study of plant diseases with reference to economic crops. 6. Accumulation and analysis of biological data using statistical methods. 7. Knowledge and use of computers.
- PO4. Transferable skills:** 1. Use of information technology for accumulation and sharing of data. 2. Dissemination of scientific ideas in writing and orally. 3. Creation of team spirit. 4. Access of library resources. 5. Regularity, punctuality, devotion and Career planning.
- PO5. Scientific Knowledge:** Use of principles of basic science and fundamental process to study and analyze the plant forms.
- PO6. Problem analysis:** Recognise and solve the problems of the plant world, Extraction of research literature, Formulate independent research related to Botany.
- PO7. Design/development of solutions:** Formulate new concepts for a green world development, betterment of human health specifically from medicinal plants, new phyto-chemical contents to meet specific need and ecofriendly environment.
- PO8. Conduct investigations of complex problems:** Carry out knowledge based research,



methodology including design of experiments, critical analysis of research data, and creation of logical conclusions.

- PO9. **Modern tool usage:** Select and application of proper techniques and modern instruments for Biochemical experiments, Molecular Biology, Biotechnology, *in vitro* culture techniques, cytogenetical and physiological activities of plants.
- PO10. **The Botanist and society:** Apply resource based knowledge to assess and access plant diversity, its importance for society and ecology, health and hazards, legal and environmental issues and conservation of biodiversity practice with responsibility.
- PO11. **Environment and sustainability:** Aware and understand the role of the plants in environmental issues, and propagate the knowledge for sustainable development.
- PO12. **Ethics:** Application of moral and ethical principles to mitigate environmental issues and biodiversity conservation.
- PO13. **Individual and team work:** Work with responsibilities as an individual, or as a member or leader in team works, or in multidisciplinary approaches.
- PO14. **Communication:** Communicate effectively the scientific temperments for the betterment of the society, propagate effective reports, proper documentation, effective presentations, and deliver clear instructions.
- PO15. **Project management and finance:** Apply knowledge and understanding the principles of engineering and management and utilize those in various capacities either as a member or a leader in a team to carry out projects in multidisciplinary fields.

Course Outcomes (CO) of B.Sc. Botany



- CO1. Critically evaluation of ideas and arguments by collection relevant information about the plants, so as recognize the position of plant in the broad classification and phylogenetic level.
- CO2. Identify problems and independently propose solutions using creative approaches, acquired through interdisciplinary experiences, and a depth and breadth of knowledge/expertise in the field of Plant Identification.
- CO3. Accurately interpretation of collected information and use taxonomical information to evaluate and formulate a position of plant in taxonomy.

- CO4. Students will be able to apply the scientific method to questions in botany by formulating testable hypotheses, collecting data that address these hypotheses, and analyzing those data to assess the degree to which their scientific work supports their hypotheses.
- CO5. Students will be able to present scientific hypotheses and data both orally and in writing in the formats that are used by practicing scientists.
- CO6. Students will be able to access the primary literature, identify relevant works for a particular topic, and evaluate the scientific content of these works.
- CO7. Students will be able to apply fundamental mathematical tools (statistics, calculus) and physical principles (physics, chemistry) to the analysis of relevant biological situations.
- CO8. Students will be able to identify the major groups of organisms with an emphasis on plants and be able to classify them within a phylogenetic framework. Students will be able to compare and contrast the characteristics of plants, algae, and fungi that differentiate them from each other and from other forms of life.
- CO9. Students will be able to use the evidence of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of life on earth. They will be able to use specific examples to explicate how descent with modification has shaped plant morphology, physiology, and life history.
- CO10. Students will be able to explain how Plants function at the level of the gene, genome, cell, tissue, Flower development. Drawing upon this knowledge, they will be able to give specific examples of the physiological adaptations, development, reproduction and mode of life cycle followed by different forms of plants.
- CO11. Students will be able to explain the ecological interconnectedness of life on earth by tracing energy and nutrient flow through the environment. They will be able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.
- CO12. Students will be able to demonstrate proficiency in the experimental techniques and methods of analysis appropriate for their area of specialization within biology.



Programme Specific Outcomes: B.Sc. Botany

SEM	COURSE	Course Learning Outcomes (CLO)
SEMESTER I (CBCS)		
	Paper I: BOT-HC-1016 Phycology and Microbiology	<ol style="list-style-type: none"> 1. Understand the microbial diversity along with its mode of nutrition, reproduction and its economic importance. 2. Know the role of microbe in the maintenance of the ecological imbalance. 3. Know the importance of microbes in modern research and its application. 4. Knowledge on the systematics of viruses, algae, bacteria and their various metabolic processes. 5. Understand the difference between beneficial and harmful viruses or bacteria. 6. Understand the high industrial application of microbes based on the metabolite it develops which are useful for the human application in various fields of medicine and nutrient. 7. Role of beneficial or harmful viruses in in research, medicine and diagnostics, as causal organisms of plant diseases.
	Practical 1.2 - Phycology and Microbiology	<ol style="list-style-type: none"> 1. Develop the practical knowledge on models of viruses and their life cycles by having a clear observation of the models. 2. Practical knowledge on the structure, reproduction of bacteria and its know the staining of the gram positive and gram negative bacteria, thus further help in the differentiation among them. 3. Practical understanding of soil microflora and its isolation procedure.



I	Paper-II: BOT-HC-1026 Biomolecules and Cell Biology	<ol style="list-style-type: none"> 1. Knowledge on the different bonding pattern among the chemical compounds and further understand the polar compounds. 2. Understand the significance of pH, buffers and their role in biological metabolism. 3. Understand the structure, types and importance of different biomolecules (Lipids, Carbohydrates, Nucleic Acids, Protein) 4. Develop the concept on various bioenergetic reactions and its mechanism under various conditions. 5. Understand the different redox reactions and the mechanism of ATP serving as the currency molecule. 6. The students will be able to understand the fundamental biochemical principles of enzymes, such as the structure and function of enzymatic process in living system. 7. Understand the structure and chemical composition of chromatin and concept of cell division. 8. Gain knowledge about “Cell Science” 9. Understand Cell wall Plasma membrane, Cell organelles and cell division.
	Practical -2.2: Biomolecules and Cell Biology	<ol style="list-style-type: none"> 1. Gain practical knowledge to detect the presence of different biomolecules and differentiate among them through various qualitative tests based on their color variation. 2. Understand the different staining procedure of various cells and know the usage of different stains. 3. Understand the types of cells and their structure. 4. Knowledge on the physiological phenomenon of cells in different osmotic conditions 5. Practical observation of different stages of cell division and gain a clear concept on the cell cycle and its various steps.
SEMESTER III (NON-CBCS)		
	Paper M301: Ecology, Plant Geography, Evolution	<ol style="list-style-type: none"> 1. Understand the structure of an ecosystem, functions and its various components. 2. Develop understanding on Population and Community ecology along with its characteristics and structure. 3. Gain knowledge on the measures to study population or community. 4. Knowledge on the different physiogeographic regions of India, factors serving for the geographic divisions and its vegetation. 5. Understand the factors responsible for evolution and as a whole the mechanism for various evolutionary processes.



III	Paper M302: Instrumentation and Laboratory Techniques	<ol style="list-style-type: none"> 1. Knowledge on the different instruments and techniques used in understanding various biological mechanisms. 2. Understand the application of biological techniques in modern research. 3. Understand the working principle, types and uses of various biotechniques like microscopy, chromatography, spectrophotometry and various other microtechniques. 4. Understand the importance of various instruments in performing various experiments in studying various organisms both micro and macro organisms 5. Basic knowledge on various solution preparations for laboratory use and use of different nutrient media for invitro maintenance of living cells. 6. Knowledge on the various taxonomic techniques used in field study and various procedure of plant specimen preservation for further study.
	Paper M303(Practical): Laboratory Instrumentation and Laboratory techniques	<ol style="list-style-type: none"> 1. Practical knowledge on how to measure the abundance, frequency of a species, population or community using quadrat method. 2. Knowledge on the biological oxygen content of polluted and non-polluted water; thereby understand the demand of oxygen in a particular ecosystem for the organisms present. 3. Understand the anatomical adaptations of plants in various climatic or physiographic conditions 4. Practical applications of techniques in studying various organisms and its advantage for the precise study. 5. Knowledge on preparation of different molar or normal solutions used in various experiments.
SEMESTER IV (NON-CBCS)		
IV	Paper: M 401 (Theory) (Morphology, Palynology, Embryology of Angiosperms)	<ol style="list-style-type: none"> 1. Students will gain a clear understanding of the most advanced plant division i.e. Angiosperms. 2. Understand the floral morphology of angiosperms and different theories related to the evolution of advanced leaf like or floral parts of the plants. 3. Knowledge on the historical prescriptive of palynology and its aspects and prospects. 4. Understand the process of development of micro and mega spores and its involvement in the process of plant development. 4. Knowledge on the process of embryo development and various



	Paper: M 402 (Theory) (Plant Taxonomy)	<ol style="list-style-type: none"> 1. Knowledge on the Objectives, Principles and Evolutionary Trends in Taxonomy. 2. Understand the different system of taxonomic classification of plants proposed by different renowned taxonomist and the system of classification followed in the present. 3. Knowledge on the principles and rules of binomial nomenclature i.e. ICBN. 4. Understand the modern trend in plant taxonomy. 5. Knowledge on the affinities, phylogeny, economic importance and comparative studies of different plant families both monocotyledons and dicotyledons.
	Paper: M 403 (Practical) (Morphology, Palynology, Embryology, Plant Taxonomy)	<ol style="list-style-type: none"> 1. Understand in details with practical knowledge of the morphology of different types of inflorescence. 2. Practical understanding of the different types of fruits and their morphology. 3. Practical observation of the morphology and types of pollen grains of different plant species under palynological studies. 4. Embryological understandings of the different types of ovules, anthers and hands on training of the different techniques to study the pollen grains and further differentiate among them. 5. Practical knowledge on taxonomy through field study and mehtods to identify the plant species and further techniques of herbarium preparation.
SEMESTER V (NON-CBCS)		
V	Paper: M 501 (Theory) (Microbiology and Immunology)	<ol style="list-style-type: none"> 1. Students will gain knowledge of the microbial world along with its diversity, nutrition, types and their occurrence. 2. Understand the application of microbes in sustainable agriculture and environment free of pollutants. 3. Knowledge on the significance of microbes for pollution management especially that of water, air and soil. 4. Students will understand the mechanism of immunity and the interction of antigen-antibody for the development of immune system in our body. 5. Develop a sense of awareness regarding infectious disease caused by various harmful microbes.
	Paper: M 502(Theory) (Plant Pathology and Lichen)	<ol style="list-style-type: none"> 1. Students on the completion of this paper will gain a clear view of the plant disease causing pathogens and their life cycle. 2. Students will know the symptoms of various plants diseases and theirby undertake different control measures to protect plants or crops from disaster. 3. Knowledge on the different disease management and usage of various control agent's agaিসnt various pathogens.



<p>Paper: M 503 (Theory)</p> <p>(Cytogenetics, Plant Breeding and Biometrics)</p>	<ol style="list-style-type: none"> 1. Students will understand the basic principles of cytogenetics and various mechanism of inheritance of characters generation after generation. 2. Understand the various mechanisms of chromosomal abberations and structural changes followed by their significant role in the characteristics of an individual. 3. Gain a clear view of the mechanism of heredity and transfer of genetic material. 4. Knowledge on the basic processes of plant breeding and crop development using different breeding techniques 5. Understand the use of statistical tools and various biometric processes in biological data analysis.
<p>Paper: M 504 (Theory)</p> <p>(Applied Botany)</p>	<ol style="list-style-type: none"> 1. This paper completely dedicated for making the students understand about the useful and harmful microbes and their significance will help gain complete knowledge on the economic importance of microbes. 2. Students will gain knowledge on the application of algae, fungi and bacteria as food, medicine, soil fertility and various commercial products. 3. Understand the impact of deforestation and its role towards climate change. 4. Knowledge on the different recent methods of plant propagation like layering, grafting, bonsai etc.
<p>Paper: M 505 (Practical)</p> <p>(Microbiology, Plant Pathology and Lichen)</p>	<ol style="list-style-type: none"> 1. Practical knowledge on the different methods of isolation of microbes and its culture using different culture media. 2. Develop understanding on the maintenance of aseptical condition for growth and maintenance of microbes. 3. Understand the methods of microbial cell count and its staining using gram stain for its differentiation. 4. Practical knowledge on the theory studied in regarding various plant pathogens and their symptoms in different plants. 5. Field study knowledge on collection and identification of various plant pathogens in different plants. 6. Understand the symbiotic relationship between microbes i.e. Lichen and its importance in the ecological maintenance.
<p>Paper: M 506 (Practical)</p>	<ol style="list-style-type: none"> 1. Practical knowledge on the chromosomal study of organisms using karyotyping. 2. Understand the numerical and structural changes occurring in plants by various chromosomal abberations. 3. Gain knowledge on the interactions of gene controlling different quantitative traits. 4. Practical idea on how to work out the biological data analysis using various statistical tools.



SEMESTER VI (NON-CBCS)

VI	Paper: M 601 (Theory) (Molecular Biology and Plant Biochemistry)	<ol style="list-style-type: none">1. Students will know about the genetic organization of an organism and its expression, replication of genetic materials.2. Students will gain knowledge about mutation which is responsible for genetic variations among organisms and various diseases caused by genetic mutations.3. Provide knowledge about various biomolecules and enzymes in cellular metabolism.4. Gain knowledge about various carbohydrates and their use in cellular metabolism.
	Paper: M 602 (Theory) (Bioinformatics, Computer Application and Biotechnology)	<ol style="list-style-type: none">1. Students will know about <i>in-silico</i> application of biological data for betterment of human life.2. Increase student's knowledge about biological databases.3. This paper will provide knowledge about molecular phylogeny and drug development process to the students.4. This paper will introduce students with basic computer technologies.5. It enlightens students with the knowledge of development of new molecular biological techniques and their use for human benefit.6. It provides knowledge about plant tissue culture and transgenic production.
	Paper: M 603 (Theory) (Plant Physiology)	<ol style="list-style-type: none">1. Understanding of physiological processes involved in the plant sciences.2. Knowledge on metabolic processes3. Mineral nutrition, energy conservation through photosynthesis, breakdown of stored foods through respiration.4. Provide knowledge on nitrogen metabolism with special reference to assimilation of nitrogen in amino acids and protein.5. Role of plant growth regulators and their application in agriculture and horticulture.6. Growth and other related physiological aspects such as circadian rhythm, photoperiodism and vernalization.7. Movements, responses to light, water and gravity.
	Paper: M 604 (Theory) (Plant Resource Utilization)	<ol style="list-style-type: none">1. Know the origin and evolution of crop plants with special reference to process of cultivation and utilization of products.2. Knowledge on medicinal plants and pharmacognosy, preparation of crude drug and possibility of modification of drugs.3. Dye yielding plants, method of cultivation and extraction of dye.4. Beverages, timber yielding plants and fibre yielding plants5. Ethnobotany- utilization of plants by various communities for their day to day life and their documentation.



<p>Paper: M 605 (Practical)</p> <p>(Molecular Biology, Biotechnology, Bioinformatics and Computer Application)</p>	<ol style="list-style-type: none"> 1. Extraction and estimation of sugar, protein, chlorophyll and other phytochemical contents. 2. Learn how to prepare culture media, tools and techniques of micropropagation including aseptic culture. 3. Use of computer in biological fields, in silico designing of drugs and active principles. 4. Modern biotechnological and genetic engineering tools and techniques, their application and limitations. 5. Know about biological, DNA and Protein Database of the world
<p>Paper: M 606 (Practical)</p> <p>(Plant Physiology and Plant Resource utilization)</p>	<ol style="list-style-type: none"> 1. Know the various physiological processes of plants through practicals 2. Determination of OP,RQ and stomatal index 3. Separation of plant pigments through chromatography 4. Chemical tests for determination of tannin and alkaloid 5. Pharmacognosical study of crude drugs 6. Histochemical tests for various phytochemical contents.

**Head of the Department
Botany, Pragjyotish College**



**Programme Specific Outcome and Course Outcomes
DEPARTMENT OF BUSINESS ADMINISTRATION**

PROGRAMME OUTCOME	<ul style="list-style-type: none"> • This enriches towards clear concept of core management papers, understanding management at various levels aiming towards corporate, Industrial, public domain sectors. • To familiarize with the organization hierarchy in every business organization with variety of skills and concepts in management. • To help students to apply key systematic and analytical decision-making skills to solve complex organizational problems. • To facilitate students to use managerial skills to foster innovation and lead change in a dynamic business environment.
PROGRAMME SPECIFIC OUTCOME	<ul style="list-style-type: none"> • After successfully completing this program, students should be able to effectively manage and plan key human resource functions, within the organisations. • To explore the fundamental knowledge in logistics operation, course familiarize towards understanding Export-Import documentation process, understanding the methods of operations, technology and terminology used in EXIM business & developing concepts of Rural Marketing contributing to national economy. • Learners will know the impact of logistics in nation's economy.

COURSE -OUTCOME

SEMESTER-1

PAPER- 1.1 (EFFECTIVE ENGLISH AND BUSINESS COMMUNICATION)

1. The effective use of various types of oral, written and digital communication modes.
2. The planning, managing and communicating various business projects.
3. High level team work and analysis of team process.

PAPER – 1.2 (BUSINESS ECONOMICS)

1. Students will be able to demonstrate knowledge of the laws of supply and demand and equilibrium and also analysis responses of markets to external events.
2. Proper concepts to explain and calculate price elasticity of demand and other elasticity.

PAPER-1.3 (BUSINESS MATHEMATICS)

1. Define basic term in the areas of business calculus and financial mathematics.
2. Explain basic methods of business calculus, types and methods of interest account and their basic application in practice.

PAPER- (1.4 PRINCIPLES OF MANAGEMENT)

1. Students will learn the techniques and processes for managing employee and team performance within the organization.
2. Through the subjects they can understand their roles and contribution to effectively manage performance and conduct at work.
3. By the end of the subject, student will understand on how performance management systems can be effectively utilized to raise the performance of individuals and teams to attain the desired goals.

PAPER- 1.5 (COMPUTER FUNDAMENTALS)

1. Knowledge of fundamental concepts of computers.
2. Familiarise operating system, programming languages, networking and internet.

SEMESTER-2

PAPER- 2.1 (PERSONALITY AND PERSONAL SKILL DEVELOPMENT)

1. Develop and accurate sense of nurturing deep understanding of personal motivation.
2. An understanding and practise of personal and professional responsibility.

PAPER- 2.2 (INDIAN ECONOMIC SCENARIO)

1. Understanding various aspects of Indian economy.
2. Understanding on different problems and approaches to economic planning and development in India.



PAPER- 2.3 (BUSINESS STATISTICS)

1. Produce appropriate graphical and numerical descriptive statistics for different types of data.
2. Apply probability rules and concepts relating to continuous random variable.

PAPER- 2.4 (ACCOUNTING)

1. Understand the basic theory, concepts and practise of financial accounting.
2. Enable a student to understand information contained in the published financial statement.

PAPER-2.5 (COMPUTER APPLICATION)

1. Understand the terminology of the computer networking and enumerate the layers of OSI model.
2. Acquire knowledge of computer application.

Semester 3**Paper-3.1 (ORGANISATIONAL BEHAVIOUR)**

1. Focus on understanding the behaviour of the employees working in the organization.
2. Enables of better understanding of Industrial- human psychology and coordination amongst various departmental levels of employee.
3. Managing how to face challenges in corporate- industrial conflict management.

PAPER- 3.2 (MARKETING MANAGEMENT)

1. State the role and function of marketing research, pros and cons in maintaining professional abilities towards product and business growth.
2. Provides brief understanding towards professional approach on various market research activities, ways to approach based on environment.
3. Enables to understand the presentation skills of marketing concepts, price, product , various promotional activities, when and where to approach.

PAPER- 3.3 (COST AND MANAGEMENT ACCOUNTING)

1. Demonstrate of costing system, cost management system, budgeting system and performance measures.
2. Critical analyse to provide recommendations to improve the operations of organisation.

PAPER- 3.4 (PRODUCTION AND OPERATION MANAGEMENT)

1. Better understanding for clear concepts of production line, narrow bottleneck activities.
2. Provides thorough technical knowledge in production and industrial activities.
3. Civil and engineering related scheduling in production plants and various techniques in operation management and control techniques.

PAPER- 3.5 (OFFICE ORGANISATION AND MANAGEMNT)

1. Proper understanding of handling office administration, handling various cost saving methods, budgetary control techniques.
2. Study of effective office systems control, work chart, work measurement, prevention of frauds within office-business management performance.

SEMESTER-4**PAPER-4.1 (HUMAN RESOURCE MANAEGEMNT)**

1. Provides understanding of personnel function and organizational goals, personnel management, job enrichment.
2. Administering the qualities of Recruitment, Performance monitoring and Appraisal Methods.

PAPER- 4.2 (MARKETING RESEARCH CORPORATE REPORTING AND COMMUNICATION)

1. Knowledge of market research project, ways to design the project sampling techniques, synopsis of research proposal.
2. Study of various scientific calculative techniques, survey instrument, manage data collection, conduct statistical analysis, questionnaire, sampling.

PAPER-4.3 (FINANCIAL MANAGEMENT)

1. Design the financial issues of determining the monetary resources needed by a business.
2. Knowledge of mix of these resources, the sources and use of funds, the benefit, risk and cost associated with it.

PAPER- 4.4 (BUSINESS LAWS)

1. Demonstrate an understanding of the legal environment of business.
2. Apply basic legal knowledge to business transaction.

SEMESTER-5**PAPER-5.1 (SUMMER PROJECT)**

1. For final year Industrial summer training dissertation project, field survey, Data collection, organised way of project research process.
2. Using various scientific tools practical knowledge of marketing research process.

PAPER- 5.2 (INDUSTRIAL RELATIONS)

1. The best possible integration of the employee at work and knowledge of their rights.
2. Better business organisation as regards its relation with employees.



PAPER- 5.3 (ADVERTISING AND SALES PROMOTION)

1. Knowledge of Marketing communication sales promotions, public relations and publicity.
2. Use of Advertising and sales promotion as a marketing tool and means of testing effectiveness.

PAPER- 5.4 (WORKING CAPITAL MANAGEMENT)

1. Evaluate comparative working capital management policies and their impact on firms Profitability, Liquidity, Risk and operating flexibility.
2. Evaluate the importance of effective working capital management and its role in the firm's objective.

PAPER-5.5 (RETAILING AND CONSUMER BEHAVIOUR)

1. Identify and understand consumer behaviour, factors influencing retail market.
2. Various psychological, market segmentation approach towards product and profit benefits.

SEMESTER- 6

PAPER 6.1 (SALES AND DISTRIBUTION MANAGEMENT)

1. Demonstrate the significant responsibilities of sales person and its team.
2. Understanding various ways of Distribution techniques and handling strategies.

PAPER-6.2 (TAXATION LAWS)

1. Enable to explain different types of income and their taxability's and expenses and deductions.
2. Understanding provision in corporate tax laws and planning.

PAPER- 6.3 (RURAL MARKETING)

1. Introduce to various aspects of Indian rural markets, Economic utilities and ways for expansion.
2. Learning on how rural market business influence direct economic growth to society, urban life and vice versa.

PAPER- 6.4 (EXPORT MARKETING)

1. Acquire in depth knowledge of International Business Strategy Process.
2. Knowing Foreign trade policy with respect to export and import. Role of SEBI, Exim, Financial Banking Institutions.
3. Study of Documentation process, Export-Import procedures in India.

PAPER- 6.5 (ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT)

1. Knowledge of entrepreneurship, ways of starting new business, various techniques, ventures, etc.
2. Understanding various ways of financial institutions involving, role of Exim, Import-Export ventures, etc.



Program Outcomes and Course Outcomes

Under Graduate program In B.Sc Chemistry

Program outcome

- To understand the basic facts and concepts in Chemistry
- To understand the importance of Chemistry in daily life.
- To develop a better understanding and reasoning of facts.
- To skill-up for basic analytical tools.
- To skill-up for various laboratory techniques used in pharmaceutical laboratories and chemical industries.
- To make efficient for various spectrometric analyses

Course Outcome

SEM-I

Paper E-101: GENERAL CHEMISTRY

After completion of this course the students will learn the atomic structure through the basic concepts of quantum mechanics. They will understand the chemical bonding through VB and MO approaches. In states of matter part, students will learn about the postulates of the kinetic theory of gases, behaviour of real gases, structure of liquid and its properties and about of crystal structure of solid states including imperfection in solid.

SEM –II

Paper E-201: GENERAL CHEMISTRY

This course may be divided into two broad parts-organic and physical chemistry. The organic chemistry part contains fundamentals of organic chemistry, stereochemistry and aliphatic hydrocarbons. The physical chemistry part contains states of chemical thermodynamics and phase rule. In chemical thermodynamics, the students are expected to learn the thermodynamics terms-closed, open and isolated system, surrounding, energy, heat, internal etc. they will also be able to know about the state functions and differentials, relation between C_p and C_v , calculation



energy, thermochemical data etc. In this course, the students are also expected to learn phase Rule and its application in some specific system. They will learn about the principle of fractional distillation and azeotrope.

SEM –III

Paper E-301: GENERAL CHEMISTRY

After completion of this course student will have an idea on periodic classification of elements in the periodic table and variation of periodic properties along the periods. They will know all oxides, hydroxides, oxyacid, halides with respect to group 1,2 and 13-17 groups of periodic table. They will learn different physical and chemical reactivity shown by heavier p-block elements due to presence of vacant d-orbitals. This course also appraises students about the variety of compounds of the main group elements including oxides, hydrides, nitrides, interhalogens, noble gases and inorganic polymers.

Another part of this course deals with the transition metal chemistry. This also gives the basic idea of coordination chemistry. Various aspects like nomenclature, structure, bonding, variety and reactivity of the coordination compounds are included for the students to appreciate.

In the electrochemistry chapter, the students will learn the theories of conductance and electrochemistry. The students are also expected to understand the various parts of electrochemical cell, fuel cell and battery.

Paper E-302: PRACTICAL CHEMISTRY

After completion of this course students will be able to analyze the organic sample qualitatively. This will help students to work in some laboratory and find the chemical composition of an unknown organic compound. Students will be able to describe and classify organic compounds in terms of their functional groups and reactivity. They will also learn the paper chromatographic separation of metal ions. They will learn the method of determination of solubility of any inorganic salt in water.



SEM –IV**Paper E-401: GENERAL CHEMISTRY**

This course is inducted to apprise students with aromatic and aliphatic hydroxyl compounds, carbonyl compounds, carboxylic acids, carbohydrates, fats and oils. They will be able to differentiate the organic compounds based on their functional groups.

In this course chemical kinetics and surface chemistry have been introduced. In this chapter student will learn the rate laws of chemical transformations, experimental methods of determining the rate of a reaction. Also they will be able to understand different types of adsorption processes and basics of catalysis. In ionic equilibrium chapter students will learn about the Ostwald's dilution law, role of buffer solution in chemical reactions and biological systems.

Paper E-402: PRACTICAL CHEMISTRY

After completion of this course students will be able to analyze the inorganic sample qualitatively. This will help students to work in some laboratory and find the chemical composition of an unknown inorganic compound or mixture.

SEM –V**Paper E-501: GENERAL CHEMISTRY**

This paper includes the chapters of electrical and magnetic properties of solids, principles of chemical analysis, spectroscopy, nuclear chemistry, and lanthanides-actinides compounds.

After completion of this course, they will learn the band theory of solids and they will be able to understand the electrical and thermal conductivity of various solids. In chemical analysis unit, student will learn about the principles of estimation of metals quantitatively and different types of separation techniques used in the laboratory. After completion of this course student will learn the basic principles and could be able to interpret the spectra for a simple molecule. They will be able to identify the number of signals of a given sample and draw the NMR spectra. Mass spectrometry is also included which gives the idea about molecular ion peak, base peaks etc. They will learn different part of mass spectrometer and method of ionization of a sample.



Paper E-501: PRACTICAL CHEMISTRY

This laboratory course enables students to determine various physicochemical properties of some chemicals, solutions, mixture etc. for example they will be able to determine the water of crystallization, viscosity of liquids, distribution coefficient of a compound in different solvent. This course also makes students efficient in preparing different organic compounds. They will be able to set-up a reaction, monitor and isolate the products after completion of this course.

SEM –VI**Paper E-601: GENERAL CHEMISTRY**

This paper contains industrial chemistry, environmental chemistry and biological chemistry. Here the students are expected to learn about different process and chemicals involved in various industries. They will have knowledge about petroleum, fats, oil and detergents and their chemical synthesis and properties. With this course students are exposed to the various application of chemistry and their importance in daily life. Chemistry behind some biological functions incorporated to know chemical reactions. In the environmental chemistry, they will learn different factors effecting the environment and their chemical reactions, for example, ozone layer depletion. They will be knowing the chemical or molecular structure and function of DNA, RNA, protein, vitamins, alkaloids, steroids, hormones etc.

Paper E-601: PRACTICAL CHEMISTRY

This laboratory course empowers students in quantitative estimations and some physicochemical methods. They will expertise in determination of hardness of water, equivalent weight of carboxylic acid, conductometric titration of acid and bases.

Again they will be preparing some inorganic double salts and co-ordination complexes. With these experiments they will learn the synthetic methods for preparing inorganic compounds and characterize those compounds.



Program Outcomes and Course Outcomes

Under Graduate program In B.Sc Chemistry

Program outcome

- To understand the basic facts and concepts in Chemistry
- To understand the importance of Chemistry in daily life.
- To develop a better understanding and reasoning of facts.
- To skill-up for basic analytical tools.
- To skill-up for various laboratory techniques used in pharmaceutical laboratories and chemical industries.
- To make efficient for various spectrometric analyses

Course Outcome

SEM-I

Paper M-101: PHYSICAL CHEMISTRY

In this course the chemical thermodynamics, chemical kinetics, will be taught to the students.

In chemical thermodynamics, the students are expected to learn the thermodynamics terms- closed, open and isolated system, surrounding, energy, heat, internal etc. they will also be able to know about the state functions and differentials, relation between C_p and C_v , calculation of bond energy, thermochemical data etc. Besides, the students will also learn about the entropy change during various processes, Gibb's free energy, Maxwell's thermodynamics relations, second law and third law of thermodynamics etc.

In chemical kinetics chapter, the students will learn the rate laws of chemical transformations, experimental methods of determining the rate of a reaction. Also they will be able to understand different types of adsorption processes and basics of catalysis.

After completion of this course, the students will be able to understand the chemical systems from thermodynamic point of view.



Paper M-102: ORGANIC CHEMISTRY

The primary objective of this course is to apprise students with introduction to organic compounds and their hybridization, bond angle, length and energies, hydrogen bonding and its effects, electron displacement, type of reagents and reaction intermediates. Acid-base behavior of organic molecules and factors affecting acidity / basicity of organic compound are also included. The different types of stereoisomerism – conformational, configurational, enantiomerism and diastereoisomerism, atropisomerism and their chemical behavior, different projection formulas are included.

This course also includes different types of organic reactions like addition- electrophilic, nucleophilic and free radical, substitution - electrophilic, nucleophilic and free radical and free radical- β elimination and pyrolytic elimination along with their mechanisms.

Paper M-103: PRACTICAL CHEMISTRY

This course provides advance physical laboratory experiments like determination of viscosity, surface tension of a liquid, verification of adsorption etc. Student will be able to correlate the importance of the theory with the practical experiments.

SEM –II**Paper M-201: PHYSICAL CHEMISTRY**

This course contains states of matter- gaseous and liquid states. The colligative property and electrochemistry is also used.

In gaseous state unit the students will learn the kinetic theory of gases, ideal gas and real gases. Besides they will also learn degrees of freedom, molecular basis of heat capacity etc.

In liquid state unit, the students are expected to learn the qualitative treatment of the structure of liquid along with the physical properties of liquid, viz, vapour pressure, surface tension and viscosity. In the molecular and crystal symmetry unit they will be introduced to the elementary idea of symmetry which will be useful to understand solid state chemistry and group theory in some higher courses.

In the electrochemistry chapter, the students are expected to learn the theories of conductivity and electrochemistry. They will have an idea on different electrochemical cells; fuel cell etc. student will also have an understanding on colligative properties of solutions.



Paper M-202: ORGANIC CHEMISTRY

In this course conformational analysis of cycloalkanes, aliphatic hydrocarbons and their stability, topocity and criteria for establishing topocity, prostereisomerism are included. The course also includes different types of both eletrophilic and nucleophilic aromatic substitution reactions, mechanism and various factors affecting the type of reaction mechanism.

General methods of preparation , physical properties , reactions and functional group transformations of compounds- saturated and unsaturated hydrocarbons, aromatic hydrocarbons, polynuclear hydrocarbons alkyl and aryl halides, 1° , 2° , 3° alcohols, aromatic and aliphatic amines, diols , triols, phenols , benzyl alcohols, aromatic and aliphatic carbonyl compounds, aromatic and aliphatic carboxylic acids, aromatic and aliphatic nitro compounds are also included.

Paper M-203: PRACTICAL CHEMISTRY

After completion of this course students will be able to analyze the organic sample qualitatively. This will help students to work in some laboratory and find the chemical composition of an unknown organic compound. Students will be able to describe and classify organic compounds in terms of their functional groups and reactivity.

SEM –III**Paper M-301: INORGANIC CHEMISTRY**

This course gives a theoretical understanding about the basic constituents of matter – atoms, ions and molecules in terms of their electronic structure and reactivity. This also develops a basic quantum chemistry concept on structure and bonding. Student will learn the rules govern in writing the electronic configurations of any elements.

The second chapter describes the basic of bonding and the preliminary laws to describe the bonding between two atoms. Students will be able to draw Lewis structure and explain the boning with the help of valence bond theory, resonance, and hybridization. They will be able to calculate the percentage ionic character of a covalent bond.



Paper M-302: INORGANIC CHEMISTRY

After completion of this course student will be able to identify or determine the shape of a molecule by using VSEPR theory. This course provides an quantum mechanical aspect of molecular orbital theory. Students will be able to use the molecular orbital theory for homonuclear and heterodinuclear diatomic, triatomic molecule and metals.

The students will also have the basic idea of ionic bonding. They will be able to identify the packing and crystal system of an ionic solid. They can find the Lattice energy of ionic solids by using Born Haber cycle.

Paper M-303: PRACTICAL CHEMISTRY

After completion of this course students will be able to analyze the inorganic sample qualitatively. This will help students to work in some laboratory and find the chemical composition of an unknown inorganic compound or mixture.

SEM –IV**Paper M-401: INORGANIC CHEMISTRY**

This course gives an idea on periodic classification of elements in the periodic table and changes in properties along the periods and details of all the periodic properties and their variations in a group or a period. This course provide familiarity to students with Periodic behavior of s and p block elements related to their electronic structure and their reactivity is included the principles governing their reactivity Periodic properties like electronegativity, electron affinity, catenation properties etc. are discussed with respect to group 1,2 and 13-17 groups of periodic table. Different physical and chemical reactivity shown by heavier p-block elements due to presence of vacant d-orbitals are discussed.

Paper M-402: INORGANIC CHEMISTRY

This course appries students about the variety of compounds of the main group elements including oxides, hydrides, nitrides, interhalogens, noble gases and inorganic polymers.



Another part of this course deals with the transition metal chemistry. This also gives the basic idea of coordination chemistry. Various aspects like nomenclature, structure, bonding, variety and reactivity of the coordination compounds are included for the students to appreciate.

Paper M-403: PRACTICAL CHEMISTRY

Quantitative analyses have been included in this course. After completion of this course students will be able to analyze the organic sample quantitatively. This will help students to work in some laboratory and find the percentage of a metal atom in a solution. They will be able to find the hardness of water from any natural source.

SEM –V

Paper M-501: QUANTUM CHEMISTRY

This course gives the introduction to quantum chemistry. The black body radiation and photoelectric effect, Compton effect are explained to give an idea of the origin of quantum mechanics. Schrodinger equation is discussed for one dimensional and three dimensional boxes. It has also been solved for hydrogen atom. The electron density is calculated from the Schrodinger equation for hydrogen atom. Further student will have idea on Schrodinger equation for hydrogen molecular ion by using Born Oppenheimer approximation.

This course provides an explanation of the Quantum mechanical treatment of chemical bonding. Students will be able to understand the Valence bond theory and molecular orbital theory on the basis of wave-function. They will be able to calculate the energy of the MOs. Students will have the idea on Huckel pi Molecular orbital theory and able to calculate the energy and degeneracy of energy levels. This course is a fundamental course for theoretical chemistry. In future student can opt for theoretical and nuclear chemistry after completing this course.

Paper M-502: PHYSICAL CHEMISTRY

After completion of this course, the students are expected to understand about the collision theory, activated complex theory, molecular beam techniques for studying fast reaction etc. They will also get the basic idea about Laser and flash photolysis. In Photochemistry chapter they will learn about various photochemical processes like Fluorescence, Phosphorescence, chemiluminescence etc. they are expected to learn about the photochemistry of air pollution.



In phase equilibrium chapter the students are expected to learn phase Rule and its application in some specific system. In surface chemistry they will learn about adsorption, BET and catalytic activity of a surface.

Paper M-503: ORGANIC CHEMISTRY

In this course different types of molecular rearrangements viz Nucleophilic- Whitmore 1,2 Shift, Wagner-Meerwein, Wolff, Hofmann, Lossen, Curtius, Schmidt, Beckman, Favorskii, Benzil-benzilic acid, Baeyer Villiger, Electrophilic- Pinacol, Fries rearrangement (aromatic electrophilic substitution) Stevens (ion pairs in solvent cage/ radical pair) and Free radical-wittig are discussed in detail. Different oxidizing and reducing agents used in organic reactions along with their mechanism are also included.

This course is also inducted to apprise students with introduction to pericyclic reactions, different types of pericyclic reactions- electrocyclic, cycloaddition and sigmatropic, theories- frontier molecular orbital method and conservation of orbital symmetry. In this course polynuclear aromatics, nitro and amino compounds, organo S and organo P compounds, active methylene compounds and heterocyclic compounds – their synthesis, reactivities, structures and mechanisms are also included.

Paper M-504: INORGANIC CHEMISTRY

This course gives the preliminary idea on symmetry operation and point group identification of inorganic complexes.

After completion of this course the student will learn about the advanced theory of bonding in coordination chemistry, i.e crystal field theory and molecular orbital theory. They will also acquire preliminary idea on organometallic chemistry and simple preparation of alkene, alkyne, ally and cyclopentyl dienyl anion and arene complexes. They will have basic idea of the structure of those complexes. Some specific examples of homogeneous organometallic catalysis, viz., Wilkinson catalyst and other have been included in this course.

Biological role of metal in terms of oxygen transport and medicine are also included and student will have an basic idea on those topic.



Paper M-505: PRACTICAL CHEMISTRY

After completion of this course students will be able to learn to set up a reaction and monitor a organic reaction. They will be preparing some organic compounds in this course.

Paper M-506: PRACTICAL CHEMISTRY

This course teach student to separate the inorganic ions from a mixture and analyze them quantitatively. The basic principle of chromatographic separating techniques is provided in this course and student will learn how to separate metal ions by paper chromatography.

SEM –VI**Paper M-601: SPECTROSCOPY**

This course introduces most important and interdisciplinary topic. The basic principles of electronic, rotational, vibrational spectroscopy are included. After completion of this course student will learn the basic principles and could be able to interpret the spectra for a simple molecule. In addition, spin resonance spectroscopy i.e. NMR and ESR are included. They will be able to identify the number of signals of a given sample and draw the pattern for both NMR and ESR.

Mass spectrometry is also included which gives the idea about molecular ion peak, base peaks etc. They will learn different part of mass spectrometer and method of ionization of a sample.

Paper M-602: PHYSICAL CHEMISTRY

In the molecular and crystal symmetry unit, students will be introduced to the elementary idea of crystal symmetry which is useful for advanced group theory. They will also learn about the conductivity of solids.

In the macromolecule unit, student will have a preliminary idea on polymer chemistry. They will be able to calculate weight average and other related parameter of a polymer.in the colloid chapter, student will learn surface active agent, micelle concentration etc.



After completion of statistical thermodynamics students will be able to correlate the classical and quantum mechanics. Students will be able to familiar with the application of statistical thermodynamics for calculation of heat capacity, residual entropy and equilibrium constants.

In data analysis, the students will know about the accuracy and precision, standard deviation etc. which are very important in quantitative analysis.

Paper M-603: ORGANIC CHEMISTRY

This course is designed to understand Theory of photochemistry: photophysical processes, electronic excitation, excited states, Jablonski diagram, Franck-Condon Principles, Fluorescence and phosphorescence, ET process, photosensitizers, Einstein's law of photochemical equivalence, quantum yield and photoreactions of benzophenone, photolytic Norrish type I & Norrish type II reactions, cis-trans isomerisation and dimerisation, cycloaddition of olefins.

This course also introduces students to different types of polymers - Addition and condensation polymers, Preparation of vinyl polymers, synthesis of terylene, nylon and fibres--natural rubber, synthetic rubber, Urea formaldehyde resins.

This course also introduces students to bioenergetics, biopolymers, nucleic acids, amino acids, enzymes. This primary objective of this course is to introduce students to the natural products which include terpenoids and alkaloids and their potential application. This course also includes fundamentals of drug design and development process, drugs for various diseases available in market, their mode of action and side effects.

Paper M-604: INORGANIC CHEMISTRY

After completion of this course student will be able to identify the electronic spectra of a transition metal complexes. They will learn the variation of electronic spectra of a complex based on the ligand field.

The reaction mechanisms of inorganic metal complexes are included. With this course student can predict the reaction rates and have idea on factors affecting on associative and dissociative mechanism. This course also deals with the basic bioinorganic chemistry such as photosynthesis, respiration and nitrogen fixation.

Student will also learn about nuclear chemistry. They will understand the Nuclear reactions, Q values etc. The chemistry of Lanthanides and Actinides also included which



idea of electronic configuration, oxidation states, lanthanide contractions, magnetic properties and electronic spectra of these elements.

Paper M-605: PRACTICAL CHEMISTRY

After attending this course the students will be able to understand different types of surface adsorption processes and basics of catalysis including enzyme catalysis, acid base catalysis and particle size effect on catalysis. They will also learn rate laws of chemical transformation, experimental methods of rate law determination, steady state approximation etc. in chemical kinetics unit.

Paper M-605: PROJECT WORK

This course is introduced to make familiar with the research methodology. Student will be able to do project work on known problems after completion of this course. They will learn how to write a project report. They will be skilled in writing the proposal, literature review, objective, methodology, results, discussion, conclusion and references. This is very important to carry forward their career in research and development.



Computer Application

Program Outcome	Students will able to build themselves as professionals in IT companies, Govt. sectors, Bank sectors etc by learning team work, communication skill, problem solving skills etc.
Program Specific Outcome	Students will able to understand the programming languages to develop software, database, application program etc by increasing their logical, mathematical, computer science ability.
Course Outcomes	
Computer Fundamental & ICT Hardware	Let students know about the basics and hardware components of the computer system
Introduction to C Programming	Helps to gets knowledge on C language
Mathematics	Helps to increase Students mathematical abilities.
Data Structure and Algorithm	Students will be able to implement linear and non linear data structure, determine and analyze the complexity of give algorithm
Computer Based Accounting and Financial Management	Helps students to learn principles and concepts of accountancy
Digital Logic Fundamental	Understand the concept of various components to design stable analog, sequential, combinational circuits
Environmental Studies	Helps student aware about the environmental issues
Software Engineering	Helps to understand the design, development , maintenance and testing of software systems
Computer Organization and Architecture	Basic organization of computer and categorization of memory organization
Database Management System	Student create and populate a RDBMS for a real life applications with constrains and keys, using SQL
Object Oriented Programming in C++	Helps to gets knowledge on Object Oriented Programming in C++
Operating System	Enable student to get sufficient knowledge about the role of Operating System in their management policies and understand the process management polices
Web technology	Implement interactive web pages using HTML, CSS and Java Script
Java Programming	Help to enhance the programming ability among students to develop software on Java platfo
System Administration using Linux	Basic troubleshooting tips, basic Linux commar basic Linux administrations
Computer Networks	Help to get the knowledge on Networking con and technologies



Open Source Software	Help to get knowledge on Latex, Scilab and python.
Automata Theory and Languages	Understand, design, construct, analyze and interpret type 0,1,2,3 languages, expressions and grammar
Computer Oriented Numerical Methods and Statistical Methods	Helps to increase Students mathematical abilities.
Data Mining & Warehousing	Perform exploratory analysis of the data to be used for mining
Distributed System	Help to get knowledge on Distributed System
Project Work	The aim of the Project work is to acquire practical knowledge on the implementation of the programming concepts studied



Department of Computer Science

One of the most important benefits of taking computer courses is that the students will have more jobs available to them. The types of new jobs that will be available depend on what kind of courses they take, but every group of courses will open up new opportunities. Almost all jobs require that a worker has some computer skills. The number of positions available to those *who aren't comfortable using computers gets smaller each day.*

Bachelor of Computer Science (B.Sc. CSC, Major) Programme : (Non-CBCS System under Gauhati University) :	
Program Outcome (PO)	Students who choose B.Sc. Computer Science (Major) Programme, will develop the ability to think critically, logically, analytically and to use and apply current technical concepts and practices in the core development of solutions in the form of Information Technology. The knowledge and skills gained with a degree in Computer Science prepare graduates for a broad range of jobs in Education sector, Research field, Government sector, Business sector and Industry.



<p>Program Specific Outcomes (PSOs)</p>	<p>Completion of B.Sc. Computer Science (Major) Programme shall enable a student :-</p> <ol style="list-style-type: none"> (1) To communicate technical information both orally and in writing. (2) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution. (3) Apply the knowledge gained in core courses to a broad range of advanced topics in Computer Science, to learn and develop sophisticated technical products independently. (4) To design, implement, and evaluate computer-based system, process, component, or program to meet desired needs by critical understanding, analysis and synthesis. (5) Identify applications of Computer Science in other fields in the real world to enhance the career prospects. (6) An ability to communicate effectively with a range of audiences (7) Realize the requirement of lifelong learning through continued education and research. (8) Use the concepts of best practices and standards to develop user interactive and abstract application. (9) Understand the professional, ethical, legal, security, social issues and responsibilities. (10) An ability to use current techniques, skills, and tools necessary for computing practice.
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Course Outcomes (COs) :	
Introduction to Computer Fundamentals and Programming	<p>On successful completion of this subject the students have the Basic concept of the Computer Fundamentals and the Programming ability in C Language by understand fundamentals and basic concepts of C programming includes arrays, structures, function, strings, Exceptions, pointers and files.</p> <ul style="list-style-type: none"> • Understand the basic terminology used in computer programming. • Write, compile and debug programs in C language. • Create programs involving decision structures, loops, strings and functions.
Basic Electronics	<p>Starting with the basic principles and laws of Electricity, this subject also incorporates following two parts of the Electronics :</p> <ul style="list-style-type: none"> • By giving the basic ideas of Analog Electronics, it includes the Active and Passive Components like : <ul style="list-style-type: none"> ➤ Diode, Semiconductor devices like- Transistors, Zener Diode, Photo Diode, Varactor, SCR, LED, LDR, FET, MOSFET, Op-Amp, IC, ➤ Power Supply using Transformer, Rectifiers, and Filter. • Digital Electronics : <ul style="list-style-type: none"> ➤ An ability to understand and appreciate Boolean algebraic expressions to digital design using Algebraic and Graphical Methods (K-Map) ➤ An in depth understanding of sequential and Combinational circuits including – Adder, Multiplexer, Demultiplexer. Encoder, Decoder, Comparators, Various Flip-Flops, Digital Counters and Registers.
ICT Hardware	<p>Let students know about the basics and hardware components (internal and external to the system unit) of the computer system :</p> <ul style="list-style-type: none"> • Familiarity with the history and development of modern computers • Familiarity with parts of computer • Understand the input and output devices. • Basic ideas of internal and external storage devices, microprocessors, motherboards, SMPS, BIOS, and the basic Hardware components used in Computer Networks.



Discrete Mathematics	<p>Helps to increase Students mathematical abilities.</p> <ul style="list-style-type: none"> • Reason mathematically about basic discrete structures such as numbers, sets, used in computer science. • Familiarity with Graph Theory, Combinatorics, Determinant and Matrices etc.
Data Structure	<p>Students will be able to implement linear and non-linear data structure, determine and analyze the complexity of give algorithm</p> <ul style="list-style-type: none"> • Know about the basic concepts of Function, Array and Link-list. • Understand how several fundamental algorithms work particularly those concerned with Stack, Queues, Trees and various Sorting algorithms.
Computer Organization and Architecture	<p>Basic organization of computer and the underlying Architecture includes :</p> <ul style="list-style-type: none"> • On successful completion of this course, the students will be able to Master the binary and hexadecimal number systems including computer arithmetic. • Understand the fundamentals of different instruction set architectures and their relationship to the CPU design. • Understand the principles and the implementation of computer arithmetic. • Knowledge about Primary and Secondary storage System.
Operating System	<p>Enable student to get sufficient knowledge about the role of Operating System in their management policies and understand the process management policies.</p> <ul style="list-style-type: none"> • To make students able to learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system. • To provide students knowledge of memory management and deadlock handling algorithms. • At the end of the course, students will be able to implement various algorithms required for management, scheduling, allocation and communication used in Operating System.



<p>Database Management System</p>	<p>To acquaint practical knowledge about creating and manipulating data in the Database. Student gets the knowledge create and populate a RDBMS for a real life applications with constrains and keys, using SQL. Students gain a good understanding of the architecture and functioning of database management systems as well as associated tools and techniques, principles of data modeling using entity relationship and develop a good database design and normalization techniques to normalize a database.</p> <ul style="list-style-type: none"> • Able to master the basic concepts and understand the applications of database systems. • Able to construct an Entity-Relationship (E-R) model from specifications and to transform to relational model. • Able to construct unary/binary/set/aggregate queries in Relational Algebra. • Understand and apply database normalization principles. • Able to construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, Delete) • Understand principles of database transaction management, database recovery, security. • To analyze Data Base design methodology. • Acquire knowledge in fundamentals of Data Base Management System. • Be able to analyze the difference between traditional file system and DBMS. • Able to handle with different Data Base languages. • Draw various data models for Data Base and Write queries mathematically
<p>Object Oriented Programming using C++</p>	<p>Helps to inculcate knowledge on Object Oriented Programming concepts (OOPs) using C++ by understand fundamentals and basic concepts of object oriented programming concepts includes classes, objects, Operator overloading, inheritance, Polymorphism, virtual functions, inline functions, friend functions, strings, Exceptions, pointers, file handling, and error</p>
<p>Computer Oriented Numerical Methods and Statistical Techniques</p>	<ul style="list-style-type: none"> • To inculcate knowledge on algebraic equations solved by Numerical Methods. • Helps to increase Students mathematical abilities. • Brief ideas for using the basic Statistical Techniques.



Computer Networks	<ul style="list-style-type: none"> • Help to get the knowledge on Networking concepts and the underlying technologies including the Wired (Guided) and Wireless (Unguided) media • To explain how communication works in computer networks and to understand the basic terminology of computer networks • To explain the role of protocols in networking and to analyze the services and features of the various layers in the protocol stack. • To understand design issues in Network Security and to
Microprocessor and Assembly Language Programming	<ul style="list-style-type: none"> • A thorough understanding of the Intel 8085 microprocessor demands concepts and skills from two different disciplines : <ul style="list-style-type: none"> ➤ Hardware concepts from <i>Electronics</i> and ➤ Programming skills from <i>Computer Science</i>. • Introduction to the basic Architecture, Instruction sets and programming of the Intel 8085 microprocessor Kit.
Automata Theory and Languages	Understand, design, construct, analyze and interpret type 0,1,2,3 languages, expressions and grammar
Web Technologies	<ul style="list-style-type: none"> • Helps to inculcate knowledge in two domains : <ul style="list-style-type: none"> ➤ Web Technological concepts and ➤ Functioning of the Internet. • It also Helps to Implement interactive Web Pages using HTML, DHTML, Cascading Styles Sheets (CSS), VB-Script and JavaScript (Client-side programming), ASP, PHP and protocols in the workings of the web and web applications.
System Administration using Linux	<p>Familiarity with the following activities being a Linux System Administrator or a Super-User :</p> <ul style="list-style-type: none"> • Basic Linux commands, • Shell-Scripts (Shell Programming) and • Basic Linux administration activities • Basic Installation, Configuration and Maintenance of the Linux System (both the Client and Server sides where applicable), • Basic Troubleshooting Tips.
Project	<p>The aim of the Project work is to acquire practical knowledge on :</p> <ul style="list-style-type: none"> • The implementation of the programming concepts and



Bachelor of Computer Science (B.Sc. CSC, General) Programme : (Non-CBCS System under Gauhati University) :	
Program Outcome (PO)	B.Sc. (General) Computer Science Programme could prepare the students for graduate training in some specialized area of computer science, to prepare students for jobs in industry, business or government, and to provide support courses for students in technology, mathematics and other fields requiring computing skills.
Program Specific Outcomes (PSOs)	<p>Completion of B.Sc. Computer Science (General) Programme shall enable a student :-</p> <p>Graduates of the <u>Computer Technology Program</u> will, by the time of graduation, have the following knowledge, abilities, and appreciation of professional standards.</p> <ol style="list-style-type: none"> (1) An ability to apply knowledge of computing and mathematics appropriate to the discipline. (2) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution. (3) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs. (4) An ability to function effectively on teams to accomplish a common goal. (5) An understanding of professional, ethical, legal, security and social issues and responsibilities. (6) An ability to communicate effectively with a range of audiences. (7) An ability to analyze the local and global impact of computing on individuals, organizations, and society. (8) Recognition of the need for and an ability to engage in continuing professional development. (9) An ability to use current techniques, skills, and tools necessary for computing practice.



Course Outcomes (COs) :	
Fundamentals of Computer Science	<p>On successful completion of this subject the students have the Basic concept of the Computer Fundamentals including :</p> <ul style="list-style-type: none"> • Fundamental Components, Block-diagram of the Digital Computer including the Input-Output (I/O) Devices, Primary/Secondary Storage Devices • Number Systems (Binary, Octal, decimal, Hexa-decimal) • Boolean algebra and Logic Gates • Concepts of Algorithms and Flowchart • Operating System Concepts • Basic Networking Concepts
Introduction to Programming in C	<p>On successful completion of this subject the students have the Basic concept of the Computer Fundamentals and the Programming ability in C Language by understand fundamentals and basic concepts of C programming includes arrays, structures, function, strings, Exceptions, pointers and files.</p>
Data Structure	<p>Students will be able to implement linear and non-linear data structure, determine and analyze the complexity of give algorithm</p> <ul style="list-style-type: none"> • Know about the basic concepts of Function, Array and Link-list. • Understand how several fundamental algorithms work particularly those concerned with Stack, Queues, Trees and various Sorting algorithms.
Introduction to Database Management System	<p>To acquaint practical knowledge about creating and manipulating data in the Database. Student gets the knowledge create and populate a RDBMS for a real life applications with constrains and keys, using SQL.</p>
Computer Organization and Operating System	<p>Students will able to learn two topics from this paper :</p> <ul style="list-style-type: none"> • Basic Internal Organization of the Computer. • Sufficient knowledge about the role of the Operating System.
Object Oriented Programming in C++ and Computer Networks	<p>This paper incorporates the following two topics :</p> <ul style="list-style-type: none"> • Helps to inculcate knowledge on Object Oriented Programming concepts (OOPs) using C++ • To get the knowledge on Networking concepts : underlying technologies.



Bachelor of Computer Application (BCA) Programme : (Non-CBCS System under Gauhati University) :	
Program Outcome (PO)	Students will able to build themselves as professionals in IT companies, Govt. sectors, Bank sectors etc by learning team work, communication skill, problem solving skills etc.
Program Specific Outcome (CSO)	Students will able to understand the programming languages to develop software, database, application program etc. by increasing their logical, mathematical, computer science ability.
Course Outcomes (COs) :	
Computer Fundamental & ICT Hardware	Let students know about the basics and hardware components of the computer system
Introduction to C Programming	Helps to gets knowledge on C language
Mathematics	Helps to increase Students mathematical abilities.
Data Structure and Algorithm	Students will be able to implement linear and non- linear data structure, determine and analyze the complexity of give algorithm
Computer Based Accounting and Financial Management	Helps students to learn principles and concepts of accountancy
Digital Logic Fundamental	Understand the concept of various components to design stable analog, sequential, combinational circuits
Environmental Studies	Helps student aware about the environmental issues
Software Engineering	Helps to understand the design, development , maintenance and testing of software systems
Computer Organization and Architecture	Basic organization of computer and categorization of memory organization
Database Management System	Student will be able to create and populate a RDBMS for a real life applications with constrains and keys, using SQL
Object Oriented Programming in C++	Helps to gets knowledge on Object Oriented Programming in C++
Operating System	Enable student to get sufficient knowledge about the role of Operating System in their management policies and understand the process management policies.
Web technology	Implement interactive web pages using HTML, CSS and Script.
Java Programming	Help to enhance the programming ability among stude develop software on Java platform



System Administration using Linux	Basic troubleshooting tips, basic Linux commands and basic Linux administrations
Computer Networks	Help to get the knowledge on Networking concepts and technologies
Open Source Software	Help to get knowledge on Latex, Scilab and python.
Automata Theory and Languages	Understand, design, construct, analyze and interpret type 0,1,2,3 languages, expressions and grammar
Computer Oriented Numerical Methods and Statistical Methods	Helps to increase Students mathematical abilities.
Data Mining & Warehousing	Perform exploratory analysis of the data to be used for mining
Distributed System	Help to get knowledge on Distributed System
Project Work	The aim of the Project work is to acquire practical knowledge on the implementation of the programming concepts studied



B.COM, E-COMMERCE MAJOR

Programme Outcome

1. After completing the Three Years i.e. up to 6th Semester for B.com (E-Commerce) Major, Students would gain a thorough knowledge in the field of Information Technology.
2. The Curriculum offers a number of Papers which would equip the Students to face the modern day Challenges like handling the computer systems and work on different Accounting and E-commerce systems tasks on it.
3. The programme would make the students well versed in the field of IT sector, Banking sector, Financing Companies etc.
4. It also enables the students to know about how a software package is built and how to troubleshoot the problems in the software.

COURSE OUTCOME:

1st Semester

105- Introduction to E-Commerce (M)

- a. The Paper will make the student to know about E-Banking Structure, E-Business Structure.
- b. It also helps the student in knowing Security and privacy of the E-commerce network.
- c. The concept of E-commerce is to give overview and knowledge about the different forms of E-Commerce, Supply Chain etc.



COURSE OUTCOME:

2nd Semester

205- Essentials of E-Commerce (M)

- a. Here the student acquires knowledge about the client server processing, Encryption of data.
- b. Through this paper the students also learn about the social impact of internet on the present society, Internet Paradox.
- c. Business Netiquette; Do'S and Don't of WebPages, Client Service, Personnel & Technical support, Network services, Accounting and Statistics

COURSE OUTCOME

3rd Semester

306- Internet & World Wide Web (M)

- a. the Paper will help the students to know about Internet - basics, architecture, components; Growth of Internet, Owners of the Internet, Anatomy of Internet, ARPANET, Internet history of the World Wide Web, Basic Internet Terminology, Net Etiquette.
- b. they can also learn about Commerce on the Internet, Governance on the Internet, Impact of Internet on society - Crime on/ through the Internet.
- c. The Students can also get to know about Internet protocols - TCP/IP, IP address and its format, TCP/IP based packages, SLIP, PPP; Network and Network Devices - Network architecture, Ethernet, FDDI, ATM : Characteristics of Local Area Network & Wide Area Network - Topology, Protocols and media, Implementation, Transmission, Access method and technologies, Addressing in Internet.



COURSE OUTCOME:

4th Semester

405- Web Designing (M)

- a. This paper introduces the students Overview of DBMS, Database languages, advantages of DBMS, different architecture of DBMS, ER-diagram, different keys, Integrity constraints, functional dependencies and normalization (upto 3rd normal form), introduction to relational algebra and SQL.
- b. It also introduces students to Hyper Text Markup Language (HTML), Extensible Hypertext Markup Language (XHTML), and Extensible Markup Language (XML) to create web pages, Moving from HTML to XHTML, XHTML element structure, style sheets, using JavaScript to display to XML, introduction to XML DOCTYPES and their uses, XML in web publishing environment.

COURSE OUTCOME:

5th Semester

505- Project Report (M)

- a. In this paper the students learn to prepare software packages using different front end and back end.
- b. It enables the students to learn and write codes for the software.
- c. In this paper the students gets the overall knowledge how a software is built and how the software can help in different fields.

COURSE OUTCOME:

6th Semester

605- Project Report (M) It introduces the Student into the field of Practical World and get practical exposure in the project work on any topic of Commerce, Economics, Business Industry or Service Sector.



COURSE OUTCOME:

6th Semester

601- Information Technology in Business (G)

- a. Here the students learn about the History of computers; types; block diagram showing different components & interconnections; primary & secondary memory; hardware and software; different programming languages-high level, low level, assembly level, machine level etc; interpreter & compiler; Applications of Computers in Business, benefits.
- b. The Students also learn about Operating system-definition, types, different parts; process and process management, file system (function of a file system), I/O management (functions of I/O management subsystem, deadlock), memory management (memory hierarchy, virtual memory); example of operating system-Windows & Linux.
- a. Through this paper the students acquire knowledge about handling application software MS Word- Features; File- Creation, Storing, modification, Formatting, Creation of Table, Splitting & Merging Cells, Sorting, Mail Merge, Macros; Applications, MS-Excel- Features; File- Creation, Storing, Modification, Use of Functions; Applications; MS PowerPoint- Features; File- Creation, Storing, Modification, Insertion of slides, pictures, tables, video, hyperlink, presentation; MS-Access- Introduction, features, creation, storage, manipulation of files, application for storing records.



ECONOMICS (BA/BSc) (Non-CBCS)

PROGRAMME OUTCOMES

The principal objectives of the BA/BSc Economics programme are:

1. To provide students a well-founded educational base as well as well-resourced learning environment in economics.
2. To provide structured curricula which support the academic development of students and to acquire knowhow on methodology of economics as a branch of social sciences.
3. To provide and adapt curricula that prepare our graduates for employment and further study as economists and apply methods and theories of social sciences to contemporary issues.
4. To provide the students with the opportunity to pursue courses that emphasizes quantitative and theoretical aspects of economics.
5. To provide students with the opportunity to focus on applied economics and policy issues in economics with the understanding of various quantitative and qualitative economic models.
6. To provide programmes that allows the students to choose from a wide range of economic specialization and familiarize with different branches of economics.
7. To encourage students of economics for conducting socio-economic researches using mathematical and statistical tools.

COURSE OUTCOMES

Course Outcomes (Major Course)			
Sl. No.	Course Code	Title of the Paper	Learning Outcome of the course
1	M 104	Microeconomics I	This course provides the basic foundation for economic analysis. The objective of the course is to make students able to analyse consumer and producer behaviour and decisions in the market. The course helps to understand firm's production processes and decisions thoroughly. The course provides knowledge to solve the basic microeconomic problems.
2	M 105	Macroeconomics I	This course aims to introduce the students to concepts of macroeconomics. This course



			understand macroeconomic principles, concepts, and theories so that the students can apply theoretical knowledge to evaluate policy measures. The course provides understanding about macroeconomic policy formulations. This course discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like GDP, savings, investment, consumption etc.
3	M 204	Microeconomics II	The course is designed to expose the students about the different market structures. The course discusses how equilibrium prices of final products are determined in different market structure. How prices of factors of production are determined is also analysed through distribution theory. The course also discussed welfare economics and financial markets.
4	M 205	Macroeconomics II	The aim of the course is to help students to identify macroeconomic implications of decisions in diverse economic entities. The course provides understanding about macroeconomic policy formulations. This course helps to understand the happening of the macroeconomic events like business cycle, inflation etc. and discusses the attainment of goods and money market equilibrium, quantity theory of money.
5	M 304	Elementary Mathematics for Economics	The objective of this course is to equip the students with primary mathematical tools for analyzing economic theory.
6	M 305	The Monetary System	The basic objective of the course is to provide basic knowledge about the theory and functioning of the monetary and financial sectors of the economy.
7	M 404	Mathematical Applications in Economics	This course teaches how to apply mathematical tool in economic theory to solve economic problems. The application of linear programming and game theory is also provided to solve the real world problems.
8	M 405	Introductions to Development Economics	The course is introduced to acquaint the students with the basic concepts and issues of growth and development. The course provides an insight into the modern approaches to economic development. An insight into the need for sustainable economic development is also given. Human Development Indicators and their role in designing development programmes is also discussed here.
9	M 501	Elements of Public Finance	This course helps to know the basic concepts of financial activities of the government. How government collects revenue and how government spends money are discussed here.
10	M 502 (for Arts)	Basic Statistics For Economics	This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. It



	stream)		develops the notion of probability, followed by probability distributions of discrete and continuous random variables.
11	M 502 (for Science stream)	Elementary Econometrics	This course provides a comprehensive introduction to basic econometric concepts and techniques. The course covers statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models. The course also covers the consequences of and tests for mis-specification of regression models.
12	M 503	Introduction to Environmental Economics	The course tries to give an idea of economy-environment interaction and describes the nature and scope of environmental economics. This course helps to reach sustainable development and teaches how to acquire skills of solving environmental problems. How to protect the environment while promoting development is discussed here.
13	M 504	International Trade: Theory And Policy	The objective of the course is to provide thorough understanding on International Economic System. The course helps to learn global economic issues and role of international institutions in tackling them. The aim is to study fundamental theories in International Economics and examine the relative economic problems in the light of models and theories.
14	M 505	History of Economic Thought I	This course describes the history of economic thought and analyses the mercantilism, physiocracy, etc. The development process of economic thinking during classical period and socialists periods are also discussed.
15	M 506	Development Policy And The Indian Economy	The objective of the course is to present basic features of Indian economy. The conceptual and measurement issues of poverty, inequality and unemployment are analysed in Indian situation. The role of Agriculture in economic development of the country is also discussed. This course throws light on the role of Industries in the development process of the country.
16	M 601	Public Economics	This course helps to know the different types of taxes in taxation system. The budgetary procedure fiscal policies and system of federal finance are also discussed. The course analyses various issues between centre and state governments.
17	M 602 (for Arts stream)	Applied Statistics	The aim of the course is to teach how to apply statistical tools like index numbers, time series analysis and vital statistics in solving the real world problems.
18	M 602 (for science stream)	Econometric Methods	The aim of this course is to provide a foundation in applied econometric analysis and develop skills required for empirical research in economics. Topics include problems in Ordinary Least Square (OLS) methods, Lagged models and Dummy variables and Time Series Analysis.
19	M 603	Economics of Natural	This is the second module of the economic devel



		Resources and Sustainable Development	sequence. It begins with the types and characteristics of natural resources. This is followed by the economics of renewable and non-renewable resources. Development-environment trade-off, sustainable development etc. issues are discussed here.
20	M 604	International Economics	The objective of the course is to provide knowledge on international economics introducing international economics as a distinct branch of economics. The Structure of Balance of Payments (BOPs), its accounting principle, disequilibrium, types and causes of disequilibrium and adjustment mechanism are also discussed. In Foreign Exchange unit, functions of Foreign Exchange Market, determination of Equilibrium Exchange Rate, concepts of Spot and Forward Rates are analysed. This is followed by the forms of economic integration and Customs Union. The objectives and functions of international institutions like IMF, IBRD, WTO are also discussed.
21	M 605	History of Economic Thought II	This course is the second part of the History of Economic Thought. Some famous schools of economic thought like Marginalist school, Austrian school, Mathematical school, Neo-classical economics are discussed here. This is followed by the Keynesian Economics and its departure from the Classical School. The next unit is on Indian Economic Thought. The main themes of Kautilya's Arthashastra; Modern Economic Ideas of Dada Bhai Naoroji, Ranade, Gokhle are discussed in brief. The economic ideas of Mahatma Gandhi on Village, Swadeshi, Khadi, Cottage Industries and place of Machine, Welfare of Labour, Non-violent Economy, Decentralisation, Trusteeship, and Sarvodaya are discussed elaborately.
22	M 606	Planning for Development: India and the Northeast	This course gives a thorough understanding on Indian Economic System. The aim of the course is to analyse the policy issues relating to economy of India and to provide broad outline about the status, issues and policies of the Indian economy at the aggregated (macro) as well as sectoral levels. The course will help the students to understand the experiences in the pre as well as post reform years, keeping the colonial experience at the background.

Course Outcomes (General/Elective Course)

Sl. No.	Course Code	Title of the Paper	Learning Outcome of the course
1	E 101	Elementary Microeconomics	The aim of the course is to expose the students to the basic concepts of microeconomic theory. The concept of equilibrium, consumer behaviour, production and cost, product price factor pricing are analysed through the units to be taught



2	E 201	Introductory Macroeconomics	This course aims to introduce the students to the basic concepts of Macroeconomics. Macroeconomics deals with the aggregate economy. This course discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, inflation, and employment.
3	E 303	Money, Banking and Finance	This course exposes students to the theory and functioning of the monetary and financial sectors of the economy. It highlights the organization, structure and role of financial markets and institutions. It also discusses interest rates, monetary management and instruments of monetary control. Financial and banking sector reforms and monetary policy with special reference to Underdeveloped Countries (UDC's) like India are also covered.
4	E 403	Indian Economy with Issues of North-East	This course examines sector-specific policies and their impact in shaping trends in key economic indicators in India and especially for Assam in the North east India. It highlights major policy debates and evaluates the Indian empirical evidence before and after reforms.
5	E 503	Public Finance	This course provides a basic overview of government finances with special reference to India. Public revenue, Public Expenditure, Public Debts, Fiscal Policy, Budgets etc. are discussed here.
6	E 504	Introductions to Growth and Development Economics	The course begins with a discussion of concepts of growth and development and their justification. This then proceeds to aggregate models of growth and cross-national comparisons of the growth experience that can help evaluate these models. The issues related to sectoral development are also discussed here.
7	E 603	International Economics	The objective of the course is to provide knowledge on international economics introducing international economics as a distinct branch of economics. The concepts of Terms of Trade (TOTs), Balance of Payments (BOPs), Foreign Exchange Rates are discussed here. The objectives of international institutions like IMF and IBRD are also discussed.
8	E 604	Planning and Development in India	Using appropriate analytical frameworks, this course analyses basic features of Indian economy and reviews major trends in economic indicators and policy debates in India in the post-Independence period, with particular emphasis on paradigm shifts and turning points. Decentralized Planning in Assam, Role of North Eastern Council, Look –East Policy etc. are also discussed here.



PROGRAMME OUTCOME OF EDUCATION (UG level)

1ST SEMESTER :

1. To build knowledge on concept, nature principles of education with reference to the latest trends and current educational thoughts.
2. To facilitate the students with the knowledge of Psychology in the educational perspective such as Memory, Intelligence, Personality, Attitude, Interest, Learning and Motivation, Mental health and Adjustment Mechanism.

2ND SEMESTER :

1. To develop understanding on ancient and mediaval system of education in India and also to build knowledge on development of education in India during pre-independence and post-independence era.
2. To develop concept on knowledge of education in social perspectives with aim in view to build good habits among the students and to make them socially adjustable.

3RD SEMESTER:

1. Develop an understanding on Emerging Issues related with education such as, Globalization, Human Rights, Women Empowerment, National Integration Students Indiscipline, Life Skill and Peace Education etc.
2. Build knowledge on concept of Measurement and Evaluation in education. To develop understanding on different measurement tools and procedure of constructing Educational and Psychological Tests like Intelligence test, Personality test, Aptitude test, Interest Test and Achievement Test.

4TH SEMESTER:

1. Develop an understanding on different perspectives of Educational Technology e.g Teaching Technology, Behavioural Technology, Instructional Technology. Build concepts on modern innovations of education like Team teaching, System approach, E-learning, E-library.
2. Critically examine the environmental issues such as Environmental Stressors, Disaster management, Population growth and its impact on Health and Hygiene, Policy and Pr Govt. of India regarding population control.

5TH SEMESTER :



1. Build knowledge on different philosophies of education like Idealism , Naturalism , Pragmatism and its impact in Aims of education, Curriculum, Methods of Teaching, Discipline, Role of Teachers.
2. To make aware of the philosophies of great educators such as Rousseau, John Dewey, Pestalozzi, Mahatma Gandhi, Rabindra Nath Tagore, Swami Vivekananda.
3. To develop understanding on different policies and practices and quality assurance in teacher education along with professional ethics of teacher . Build knowledge and information on different organizations like DIET, NCTE, CIET , NUPA, NCERT, SCERT.
4. To develop knowledge and understanding on Teaching principles and Methods of teaching . To make aware of teaching devices such as explanation, illustration, questioning, narration drill and review.
5. To develop detail knowledge on basic concepts of statistics and uses of different statistical procedures in education such as Normal Probability , Variability, Correlation etc.
6. To develop scientific attitude through experimentation in various psychological tests mainly to measure personality, level of attention, memory and application of trial and error Learning.

6TH SEMESTER :

1. To develop concepts on developmental characteristics of infancy, childhood, adolescents mainly focussing on physical, social, emotional and personality development.
2. To build understanding on relevance of continuing education in present day society and different methodologies and techniques of continuing education.
3. To critically examine the behavioural characteristics , educational provisions and support services of special children .
4. To develop understanding on concepts, objectives, needs, importance and techniques of Guidance and Counselling .
5. To build knowledge on educational supervision, institutional planning and educational administrative structure of India in general and Assam in particular.
6. To stimulate problem solving and skill of analyzing data through investigation in various fields of education by undertaking a project work .



Paper – 6.01

Developmental Psychology

This paper can able to understand the students about the basic concepts of development and growth. They can able to forecast how heredity and environmental factors affecting pre-natal development. Moreover the student will be able to acquaint with the development aspects during infancy, childhood and adolescence with special focus on its different development like social, emotional and personality development.

Paper – 6.02

Continuing Education and Distance Education

This paper will able to understand the student about the concept of continuing education, its relevance to the changing society and different methodologies and techniques of continuing education. The students can able to understand the development of Adult Education in India, kinds of Adult Education Programme for India and the major problems conformating adult education. Moreover, the student can able to understand the meaning, characteristics, merits, demerits different forms of instructional strategies of distance education, and its growth in India.

Paper – 6.03

Special Education

This paper will help the students to understand the meaning, importance of special education and the different government policies, legislations regarding persons with disabilities. Through this paper the students can able to familiarise the different types of special children with their behavioural characteristics, educational provisions and support service.

Paper – 6.04

Guidance and Counseling

This paper will help the students to acquaint the concept, nature, scope, need and importance of guidance. It also familiarize them with the different types of guidance programm organization. Through this paper the students can able to acquaint the concept, objectiv importance, techniques of counselling the role of school counsellor and qualities of a good



Paper – 6.05

Educational Management and Administration

Through this paper, the students can able to understand the basic concepts of management, organization and administration. It helps the students get the knowledge on types, principles and functions of Educational Management. Moreover, the student can able to acquaint on educational supervision, institutional planning and educational administrative structure of India in general and Assam in particular.

Paper – 6.06

Project Work

This paper will help the students to undertake the project work on stipulated area including – identification of problem, formulating the objectives, related literature, drawing hypothesis (wherever possible), field identification, sources of data collection, analysis, drawing conclusion and reporting. Through this work the student can able to reinforce the experiential and contextual learning. It can inculcate the problem solving and analysis skills of the learner and also help them find the educative value.

Foundation of Education Theories and Principles: 1.01 (Major)

This paper will make the students acquainted with the scientific and sound principles of education. It will impart the concept, nature and scope of education. This paper will also help students to gain three dimensional knowledge about the education such as the learner, the teacher and the curriculum. Moreover through this paper, students will acquire knowledge about the concept of discipline and freedom. Besides it will create awareness among the students about the latest trends and current educational thoughts.

Educational Psychology: 1.02 (Major)

This paper will help the students to understand the relation between education and psychology and different methods of educational psychology. Moreover it will enable the students to understand learning process, memory, attention, instinct and emotion and to acquaint the students with personality, type and trait theories. Again it will enable the students to understand the intelligence- its nature and different theories. Besides it will facilitate the students to understand the nature of creative talent and processes and of creative individuals and the implication for ic



nurturing such talent. Lastly it will enable the students the concept and process of adjustment and mental health and hygiene for promotion of mental health.

Development of Education in India: 2.01 (Major)

This paper will make the students acquainted with ancient and mediaeval system of education in India. It will impart the concept, nature and scope of education. Moreover it will help the students to understand the development of education in India during the British Period. Again it will acquaint the students regarding the development of education in India during post-independence period. Besides it will enable students to understand the development of education system in the state of Assam.

Sociological Foundation of Education: 2.02 (Major)

This paper will acquaint the students with education as a social process. Through this paper students will inculcate the knowledge of education from social perspective view and to understand education as a determinant of social change and development. This paper will attribute the students to develop good social habits and will make them socially attributable.

Paper 5.04

Teaching - Learning Method and Pedagogy

This course of education acquaint the students with the teaching learning process, the principles, maxims and fundamental of teaching. Students will develop an understanding of the various method of teaching like lecture method, demonstration method, problem solving method and Programme Instruction. Understanding about the role of the teacher as a facilitator of learning, as a counselor and as a researcher will become possible by studying this paper. This course will develop an understanding among the students about different devices of teaching like Narration, Explanation, Illustration, Questioning, Drill, Review etc. Students will also be acquainted with different strategies, levels and models of teaching. It will also develop an understanding about teaching effectiveness and classroom management and also develop a positive attitude towards the teaching profession.

Paper 5.05

Statistics In Education.

This paper enable the students to understand the basic concept of statistics and different statistical procedures used in Education. Studying these paper will give detailed knowledge about mean, median, mode, quartile deviation, standard deviation, co-efficient of correlation by product moment method and rank difference method, Normal Probability Curve and also about different types presentation of data. Moreover by studying this paper students will get a detailed know descriptive statistics and about the application of statistics in Education.



Paper 5.06
Practical Paper.

This paper will enable the students to understand the concept of experimental psychology and also give knowledge about the methods of conducting various psychological experiments and test. By applying different psychological test students can measure intelligence, personality, interest, memory, level of attention and interest of the experimentee.

It will also develop scientific attitude among the students.

Paper -- 5.01 (Major)
Philosophy of Education

This paper will make the students able to understand how Philosophical ideas have influenced educational ideas. Students will be acquainted with the relationship between Philosophy and Education i.e. how our ancient Indian schools of Philosophies like vedic, Buddhist & Muslim Philosophy influence our present day education system. Moreover students will be able to get knowledge about the three major western philosophies of education i.e. Idealism, Naturalism and Pragmatism and its influence on aim of education, curriculum, method of teaching, discipline and role of the teacher in the present day context.

Paper 5.02
Educational thinkers -- Oriental and occidental.

In this paper attempt is made to give knowledge about the life sketch of our great educational thinkers like Rousseau, Pestalozzi, John Dewey, Mahatma Gandhi, Rabindra Nath Tagore and Swami Vivekananda. Students will be able to understand the philosophy of life of these great educational thinkers and their contribution to present day educational thoughts. Students will also be able to learn about the views of the western and Indian thinkers on aim of education, curriculum, method of teaching, discipline and role of teacher.

Paper 5.03
Teacher Education

Teacher education will acquaint the learner with the concept, aims, scope and development of teacher education in India. Teacher education will develop understanding about the different policies and practices and quality assurance in teacher education along with the needs and importance of in-service training programme.

By studying this course learner will be acquainted with skilled based and competency based teacher education. Moreover students will develop understanding about professional ethics and accountability of teacher. Learner will be acquainted with different organizations like SCERT, DIET, NCERT, NCTE, CIET and NUEPA which are involved in teacher education programme. It enable and empower the teacher to meet the requirements of the profession and face the challenges.



Emerging Issues and Education Paper:3.01 (Credits-8)

(Major Course)

This paper will make the students able to understand the emerging issues in education. The learner will be able to have awareness and understanding about different literacy programmes, woman empowerment, Human rights, globalization, Vocationalization of secondary education. Apart from this, learner will understand the students indiscipline and its causes and remedies. The student will also be introduced with the meaning, importance and means of life skill education. The students will be able to understand the need and importance of national integration and international understanding and the role of education in promoting them. Last but not the least learner will be able to understand about the concept, importance, methods and programmes of peace education. The component of peace education will enable the learner to emphasize their personal responsibility to show respect for all kinds of life and help students develop a healthy self image, build trust with others, promote social growth and address the suffering in the world while learning compassion and empathy.

Measurement and Evaluation in Education

Paper :3.02 (Credits-8)

(Major Course)

On Completion of the Course, this paper will make the learner able to understand the knowledge of the concept of measurement and evaluation in education. The learner will be able to understand the different types of educational tests and their uses. The learner will be able to understand the characteristics of a good measuring instrument and the procedure of constructing educational and psychological tests. Apart from this the learner will also be able to understand the intelligence tests, personality test, aptitude, interest and attitude test and educational achievement test. The learner will be able to have the idea about the New Trends in evaluation also. It will help the students to understand the Normed referenced and Criterion referenced test, how to report the cumulative record card, Grading and Continuous evaluation and also Formative and Summative evaluation.



Educational
Technology
Paper:4.01
(Credits-8)
(Major Course)

This paper of major course will promote the learner to understand the basic components of educational technology in 21st Century. The student will be able to understand the concept and scope and objectives of Educational Technology, teaching technology, behavioral technology and instructional technology. The learner will also be able to understand about communication, process, teaching aids, system approach and use of Computer and internet in education technology. The learner will be able to understand the various sophisticated technology has been developed recently which make human life fast and precise and now a days it is used by millions of people all over the world in their daily life. At last, the learner will also be able to understand the Innovation in Education through Educational Technology such as Team Teaching, E- learning, E- library.

Environmental Education and Population Education

Paper: 4.02 (Credits-8)

This paper will make the students understand environmental education. The learner will understand environmental education at different levels. The learner will understand the environmental stress and its impact. Apart from this, the learner will be able to understand the effect of population growth on poverty, health and hygiene. The importance of population education in school levels. The learner will be able to understand the population and quality of life, population in relation to socio-economic development, health status, health service, nutrition, policies and programmes of government of India regarding population control. The students will be able to understand the teacher's role in creating awareness of population problems, Method and approaches such as Inquiry approach, Observation, self-study, Discussions, Assignment and uses of mass media (Newspapers, Radio, Tv) and Audio-Visual Aids.



the Concept, scope and importance of environmental education. The student will also be able to understand the programmes of environmental education. The student will also be able to understand the importance of disaster management education.

Apart from this, the learner will be able to understand the effect of population growth on poverty, health and hygiene. The importance of population education in school levels. The learner will be able to understand the population and quality of life, population in relation to socio-economic development, health status, health service, nutrition, policies and programmes of government of India regarding population control. The students will be able to understand the teacher's role in creating awareness of population problems, Method and approaches such as Inquiry approach, Observation, self-study, Discussions, Assignment and uses of mass media (Newspapers, Radio, Tv) and Audio-Visual Aids.



DEPARTMENT OF ENGLISH

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Ref

Course Outcome

Semester I

PAPER 1

This paper acquaints students with the contexts of the English literary tradition. Students are expected to read and relate the circumstances that influenced, shaped and contributed to the process of literary production from the medieval period to the Renaissance.

PAPER 2

In this paper, students will study poetry and drama that emerged against the literary and historical contexts studied in the previous paper. This paper will shape and examine the student's ability to identify and elaborate on lines and passages from the period to the starred texts.

Semester II

PAPER 3

The objective of this paper is to acquaint students with the contexts of the English literary tradition from the Restoration of Charles II and the reopening of the theaters in 1660 to the Age of Romanticism.

Paper IV

In this paper, students will have the opportunity to study the literary texts that reflect the socio-cultural and political interests of the period studied in paper III and also examine the ways in which texts part in and are produced by urgent issues of a time.



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Semester III

Paper V

This paper seeks to acquaint students with the contexts of the English literary tradition as it develops in the Victorian Age. Students are expected to study the social and literary history of the Victorian world as a necessary preparation for the texts that they will encounter in Paper VI.

Paper VI

Students will here encounter the poetry that is characteristic of the Victorian Period- forms like the dramatic monologue, the love poem, pre-Raphaelite experiments and the beginning of modern poetic experience in Hopkins.

Semester IV

Paper VII

This paper will acquaint students with the circumstances that shaped the processes of literary production from the twentieth Century to the present.

Paper VIII

This paper brings to the student a selection of the poetry and fiction of the modern and postmodern eras that is representative of important trends, critical shifts and formal experimentation.

Semester V

Paper 9

This paper will introduce students to the 20th Century English and European drama. It will also deal with stylistic/technical innovations and thematic experimentation.

Paper 10

The epoch of modern drama marks the proliferation of avant-garde theory will be discussed in this paper. The impact of contemporary philosophy, ideas and art movements like existentialism, expressionism, impressionism, Marxism will be discussed in this paper.

Paper 11



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This paper introduces students to the literary form of the essay through a selection of representative texts from the 18th and 19th Centuries.

Paper 12

This paper will introduce students to developments in the genre of the essay in the 20th Century. Students will note how the genre has adapted in order to address a variety of contemporary issues and become vehicle for representing personal experiences, moved into literary, social and cultural criticism and engaged in polemic and persuasion.

Paper 13

This paper will enable the students to appreciate the element of narrativization in seemingly linear, transparent, straight forward accounts of lives of significant people set down in memoirs, biographies and letters.

Paper 14

This paper on writing by women introduces students to a body of literature that has emerged with growing feminist awareness of women's lives and their representation.

Semester VI

Paper 15

This paper acquaints students with some of the key ideas of Western literary criticism from Graeco-Roman antiquity to the modern period and expects them to examine the implications of ideas. It is designed to present students with the opportunity to study key concepts associated with the names of significant thinkers in the history.

Paper 16

This paper introduces students to key ideas and texts that will familiarize students with the intellectual shifts in the reading of culture, language and literature in the 20th Century and the emergence of Theory and acquaint them with common concepts and notions that they are likely to encounter in the reading of theory.



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Paper 17

Section I of this paper will attempt to look at the changing notions of the relationship between humans and nature and between nature and culture over the ages.

In Section II, students will study diverse texts representing attitudes to nature at different points of time in England and America.

Paper 18

This course is an introduction to the study of Classical and Judeo-Christian myth and their recurrence in later social, historical, cultural and literary contexts. It is expected to provide a gateway to the reception of mythical ideas and images in western art and literary cultures.

Paper 19

Optional: Option A: Indian English literature

Section A: Contexts

This paper will introduce students to the arguments and the issues raised by the texts.

Section B: Non-Fictional Prose

This paper will introduce students to some texts, composed by M. K. Gandhi, Jawaharlal Nehru and Amartya Sen.

Paper 19

Section A: Poetry

In this section, students will answer two short questions and one long question which could be on an individual poet, on trends, themes or on the poetry set against a cultural and historical background.



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Section B: Fiction

This paper will introduce students to the location of each writer, the development of a 'narrative world in certain texts, the modern Indian milieu with its caste and class divisions, social and moral values and human relationships that each text represents in unique and individual ways.

Section C: Drama

The plays, in this section, translated from regional languages into English are deeply embedded in folk and classical dramatic traditions and are expected to be studied against this context.

Optional: Option D: Indian Language and Linguistics

Section: A: Introduction to linguistics

This paper will help students to form ideas on the scope of linguistics, the phonological structure of English, the organs of speech etc.

Section: B: Sociolinguistics

This paper will help students to form an idea about the use of language in society.

Paper 20

In this paper, students will be acquainted with the development of the English language from the Middle English period and the various influences which have contributed to make it what it is today.

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B.COM, FINANCE MAJOR

Programme Outcome

1. After completing the Three Years i.e. up to 6th Semester for B.com (Finance) Major, Students would gain a thorough knowledge in the fundamentals of Finance.
2. The Curriculum offers a number of subjects which would equip the Students to face the modern day Challenges.
3. The programme would make the students well versed in the field of Industries, Banking sector, Financing Companies etc.
4. It also enables the students to know about rural sector, modern banking functions, Indian financial system as well as international banking sector.

COURSE OUTCOME:

1st Semester

105- Rural and Micro Finance (M)

- a. The subject will make the student to know about Rural Development and its various Schemes.
- b. It also helps the student in knowing about the Poverty Alleviation Programmes.



c. The concept of Microfinance and the Institutions providing Micro Credit can be studied here.

104- Indian Financial System (G)

a. to get the knowledge of Financial System of our country and how it works.

b. to focus on Financial Institutions, Financial Market etc.

c. It will help in knowing the roles of Regulatory Bodies and how it functions.

COURSE OUTCOME:

2nd Semester

205- Micro Credit Institutions (M)

a. to acquire conceptual knowledge of the micro financing system in India.

b. to learn about the Rural Development and its different programmes.

c. to get a brief idea regarding the working of NABARD, R.B.I etc as a Micro Credit Institutions.

COURSE OUTCOME

3rd Semester

306- Financial Institutions and Market (M)



- a. the subject will help the students to know about banking and non-banking financial institutions.
- b. they can understand the conditions of Financial markets and its impact on the economy.
- c. It will help in knowing the roles of Regulatory Bodies and how it functions

305- Corporate Law (G)

- a. the subject helps in making the students aware of knowing the basic rules and concepts of Corporate Laws.
- b. The student will be well versed in basic provisions regarding legal framework governing the corporate world.

COURSE OUTCOME:

4th Semester

405- International Banking (M)

- a. It introduces the students with the role of banks in the modern international market.
- b. To give a comprehensive knowledge about Foreign Trade, Foreign Exchange etc.
- c. An in depth study of International Financial Institutions, Offshore Financial Centres etc.



404- Financial Services (G)

- a. The subject will help the students in understanding the working of Financial System in India in a broader way.
- b. An in-depth study of Merchant Banking, Leasing, Hire Purchase etc.
- c. To create an understanding about recent trends in Financial Services Sector.

COURSE OUTCOME:

5th Semester

505- International Trade (M)

- a. to develop the knowledge of International trade.
- b. It enables the Students to understand the theories of Foreign Trade in a wider aspect.
- c. to provide an idea regarding the functioning of MNC's, Global Companies etc.

504- Regulatory Framework of Business-I (G)

- a. To make the student understand about the Business Laws.
- b. To equip them with proper knowledge of Contracts, Sales of Goods etc.



COURSE OUTCOME:

6th Semester

603- Modern Banking Practices (G)

- a. To provide the Student with the knowledge of the functioning of the Bank.
- b. To help them in learning the roles of bank in the modern world of Today.
- c. To create awareness about modern banking services like e-banking etc.

604- Regulatory Framework of Business-II G)

- a. To enable the students to apply the provision of business laws in business activities.
- b. To inculcate knowledge on various laws relating to business such as Partnership, R.T.I, Consumer Protection etc.

605- Project Report (M)

It introduces the Student into the field of Practical World and get practical exposure in the project work on any topic of Commerce, Economics, Business Industry or Service Sector.



PROGRAMME OUTCOME

THREE YEAR DEGREE COURSE

The students graduating in geography will be immensely benefitted with following skills:

- The programme will enrich and enlighten the students with fundamental geographical understanding to chase higher education in the discipline.
- The programme will prepare the students with adequate knowledge applicability and problem solving capacities.
- The programme will provide encouragement among students to pursue a career in Geoinformatics in future.
- The programme deals with project work and preparation of dissertation which will promote research work and research profession among the students.
- The programme will build a sound geographical base in the students which will immensely help them while preparing for any competitive exams.
- The programme deals extensively on environment and man-nature relationship. This will create a sense of awareness and social responsibility among the students towards the environment.
- Most importantly, the programme will help students to become better and responsible citizens of the nation.



COURSE OUTCOME

THREE YEAR DEGREE: MAJOR COURSE

Paper 101: UNDERSTANDING GEOGRAPHY

Course outcomes:

- The students will get introduced to the very nature and scope of the discipline Geography.
- The students will gain insight into the historical background of Geography. The development of its subject matter through various phases.
- The paper will build the basic foundation of knowledge about Geography among the students.

Paper 102: BASIS OF GEOMORPHOLOGY

Course outcomes:

- The paper will introduce the students about the physical aspect of the subject Geography.
- The students will learn about the different branches of geomorphology. The concepts learned will help students to observe and understand the different landforms critically.
- The paper will help the students in exams like NET/SLET/ UPSC and other competitive exams.

Paper 103: GEOMORPHOLOGY PRACTICAL

Course outcomes:

- The students will learn various cartographic techniques for representing different relief profiles.
- The students will be able to identify different geomorphological features from toposheets and their representation and interpretation from geographical perspectives.
- The paper will help the students to identify common rocks and their characteristics.

Paper 201: OCEANOGRAPHY AND CLIMATOLOGY

Course outcomes:

- The students will learn about the different elements and processes associated with the oceans, man-ocean relationship and also the various ocean reso



- The paper will be beneficial for the students in developing ideas on climate related aspects of geographical analyses.
- The students will be benefitted in preparing for NET/SLET/UPSC and other competitive exams.

Paper 202: WORLD REGIONAL GEOGRAPHY

Course outcomes:

- The paper will be useful for the students in gaining a comprehensive idea of the continents from a geographical perspective.
- The students will learn about the geographic profile of developed and developing nations.
- The paper will provide the students detail knowledge about the regional geography of Asia which will be helpful for the students in many competitive exams.

Paper 203: PRACTICAL ON OCEANOGRAPHY, CLIMATOLOGY AND WORLD REGIONAL GEOGRAPHY

Course outcomes:

- The students will gain knowledge about both physical and cultural attributes related to different oceans around the world.
- The paper will be useful for the students in gaining information on representing and interpreting various climatic phenomena.
- The paper will help students in mapping and interpreting the diverse aspects of physical and cultural features at world regional context.

Paper 301: SOIL AND BIOGEOGRAPHY

Course outcomes:

- The students will gain knowledge about the physical and chemical properties of soil, the processes and factors of their formation and subsequently about their different types.
- The paper will enhance the knowledge of the students about their environment, the associated environmental concepts and relevance.
- Understanding about the biogeographic regions, their distribution and also about the man-environment relationship will create awareness and sense of responsibility among students towards the environment.



Paper 302: ECONOMIC GEOGRAPHY

Course outcomes:

- The paper will help the students to understand how geographic aspect is associated with economic space.
- The students will gain knowledge about the classification, distribution and importance of different resources and economic activities from geographical perspective.
- The paper deals with the economic and resource base development which will assist the students to understand the subject matter at global context.

Paper 303: PRACTICAL ON BIOGEOGRAPHY & ECONOMIC GEOGRAPHY AND FIELD STUDY

Course outcomes:

- The students will gain a comprehensive understanding about the composition and distribution of soil and vegetation at regional and national context.
- The paper will develop the skill of the students in cartographically representing different economic data, trend analysis etc. which will help the students in their dissertation work.
- The paper will be useful for students in preparing for NET/SLET/UPSC and other competitive exams.

Paper 401: FORMS AND PROCESSES IN GEOMORPHOLOGY

Course outcomes:

- The paper will be useful for students in learning the dynamic processes and agents which shape the different landforms that they see around them.
- The students will develop a basic understanding of the processes and landforms related to fluvial agents.
- The paper will provide knowledge about the effects of geomorphic hazards on land and people and its management and planning.

Paper 402: HUMAN GEOGRAPHY

Course outcomes:

- The students will gain in-depth understanding of the human perspective in geography.
- The paper will serve the students in gaining historical knowledge of Human geography, its development around different parts of the world and v concepts under its domain.



- The paper will introduce the students about man-environment relationship in different geographical conditions and also will throw light into the distribution of major racial groups.

Paper 403: PRACTICALS ON GEOMORPHIC PROCESSES

Course outcomes:

- The paper will be useful for the students in identifying and representing different geomorphic landforms and understanding their characteristics.
- The students will get to learn about the delineation of drainage basin and classify its components based on different cartographic techniques.
- The paper will create an interest among students by providing a comprehensive idea of fluvial forms and processes using statistical analysis.

Paper 501: CONCEPT OF REGIONAL DEVELOPMENT PLANNING AND GEOGRAPHY OF DEVELOPMENT OF USA AND JAPAN

Course outcomes:

- The paper will be useful for students in understanding the disparities within and between countries and their subsequent crisis.
- The students will achieve a comprehensive understanding of the growth and distribution of important industries of the developed world which will inspire them to critically analyse the same for developing nations.
- The paper will be very useful for students preparing for NET/ SLET/ UPSC and other competitive exams.

Paper 502: REGIONAL GEOGRAPHY OF INDIA AND SAARC NATIONS

Course outcomes:

- The paper will provide an in-depth and broad understanding of India in terms of its location, physical, population, agriculture, industry and transport sector. This will enrich the perspectives of the students towards Indian geography.
- Understanding the regional geography of SAARC nations will be useful for the students in terms of regional geo-politics and international conflict & co-operation.
- The paper will broaden the students' observation about the Indian sub-continent.



Paper 503: CARTOGRAPHIC AND QUANTITATIVE METHODS

Course outcomes:

- The students will acquire fundamental knowledge about cartography, map characteristics, map design and map layout.
- The paper will be useful for the students in terms of surveying an area and learning the basic principles and techniques associated with surveying.
- The students will understand the need of quantification in Geography and learn important quantitative methods involved in geographic data analysis.

Paper 504: POPULATION AND SETTLEMENT GEOGRAPHY

Course outcomes:

- The paper will provide basic understanding of population as a field of study in geography and its significance at present day context.
- The students will acquire knowledge about the population distribution in the world, factors affecting population distribution and about the concept of migration.
- This paper deals with the field of settlement, concepts associated with settlement theories and different growth and morphology of settlements which will benefit the students in pursuing further research.

Paper 505: PRACTICAL ON CARTOGRAPHIC METHODS (SURVEYING & MAP WORKS)

Course outcomes:

- This paper will provide the students to undertake survey exercises in a geographical area and apply different cartographic techniques to map the same.
- Learning map projections is an integral part of map making and this paper will enable the students to gain insight about various map projection techniques.
- The paper deals with representing socio-economic data in the form of maps which will be useful for the students in their project work.

Paper 506: PRACTICAL ON CARTOGRAPHIC AND QUANTITATIVE METHODS

Course outcomes:

- This paper will offer the students to learn different cartographic methods to represent population data at local, regional and global context.



- Preparation of thematic maps and reading and analysis of these maps including toposheets will enhance the understanding capacity of the students and help them to relate different features with one another.
- Statistically analysing geographic data helps the students in scientific interpretation of geographical phenomena. This paper will aid the students in strengthening their geographical research by applying various appropriate quantitative techniques.

Paper 601: ENVIRONMENT AND DEVELOPMENT

Course outcomes:

- The paper will introduce the students to diverse aspects of environment and its issues and its close relationship to development.
- The students will obtain the opportunity to discuss and understand the geographic dimensions of environmental problems.
- The paper will provide the students a broad and detail idea of sustainable management and development from geographical perspective which is one of the relevant topic in present day context.

Paper 602: SOCIAL AND POLITICAL GEOGRAPHY

Course outcomes:

- The paper will be useful for the students in recognizing the intrinsic relationship between geography, society and environment.
- The students will be introduced to the fundamental concepts in political geography and the paper will help them to understand the political issues from geographical point of view.
- The paper will be useful for the students in preparing for NET/SLET/UPSC and other competitive exams.

Paper 603: REGIONAL GEOGRAPHY OF NORTH EAST INDIA WITH SPECIAL FOCUS ON ASSAM

Course outcomes:

- The paper will help the students to gather an in-depth and detail knowledge of North-East India which is very pertinent at regional context.
- The students will get the opportunity to learn about the geographical aspects of Assam and its significance in terms of location, economy and biodiversity.
- The paper will be useful for the students to prepare for different national competitive exams in general and regional and local exams in particular



Paper 604: PRINCIPLES AND APPLICATIONS OF REMOTE SENSING, GIS AND GPS

Course outcome:

- The paper will provide the students about the latest and recent development in geographical studies which include RS, GIS & GPS.
- The students will be introduced to a very new approach in geography and will give them a basic understanding about RS, GIS & GPS.
- The paper will encourage the students to seek a new path of study in geographical domain.

Paper 605: PRACTICALS ON ADVANCED TECHNIQUES IN GEOGRAPHY

Course outcomes:

- The students will get a first hand on knowledge about a GIS lab and will learn about the different technical aspects of geoinformatics.
- The paper will give the opportunity to develop the technical skills of students in the field of RS, GIS & GPS.
- The paper will encourage the students to take geoinformatics as a career option and venture out for diverse opportunities in the same field.

Paper 606: PROJECT WORK

Course outcomes:

- The paper will introduce the students about the fundamental aspects of research in geography.
- The students will be able to develop their knowledge base and will be able to think critically.
- The paper will prepare and encourage the students to take research as a career option in future.



THREE YEAR DEGREE: GENERAL COURSE

Paper 101: PHYSICAL GEOGRAPHY-I

Course outcomes:

- The paper introduces the students to the field of Physical geography which will help the students to inter-relate different physical features they see around them.
- Understanding the types of landform and the forces behind their formation will create an interest as well as a curiosity among students to pursue geography in future.
- The paper will be useful for the students in learning the different aspects of ocean and their significance on climate and economy.

Paper 201: PHYSICAL GEOGRAPHY- II

Course outcomes:

- The paper will be useful for the students in understanding the varied aspects and concepts of climate.
- The students will learn about the environment from geographical perspective and its significance at present day context.
- The paper will introduce the students to the scope of soil geography. It will enrich the students' understanding about the profiles, processes of formation and types of soil.

Paper 301: HUMAN GEOGRAPHY

Course outcomes:

- The students will gain an in-depth knowledge about the basic of Human geography, its approaches and concepts.
- The paper deals with man-environment relationship which will bring about a sense of awareness and responsibility among students towards nature.
- Understanding of population and settlement aspects of geography will help the students to perceive the cause-effect factors of many social problems.

Paper 302: PRACTICAL ON PHYSICAL GEOGRAPHY

Course outcomes:

- The students will have a skilled learning about identifying and representing different relief features and reading of topographic maps.



- The paper will be useful for the students in reading and interpreting different weather maps.
- Application and handling of various weather instruments will encourage the students to learn about the applied aspects of physical geography.

Paper 401: CARTOGRAPHIC AND QUANTITATIVE TECHNIQUES IN GEOGRAPHY

Course outcomes:

- Preparation of thematic maps and reading and analysis of these maps will enhance the understanding capacity of the students and help them to relate different features with one another.
- The paper incorporates surveying and remote sensing, GIS and GPS topics which will offer the students both traditional and digital cartographic techniques.
- Statistically analysing geographic data helps the students in scientific interpretation of geographical phenomena. This paper will aid the students in strengthening their geographical research by applying various appropriate quantitative techniques.

Paper 402: PRACTICAL ON HUMAN GEOGRAPHY

Course outcomes:

- The students will learn about population data representation and interpretation using different cartographic techniques.
- The paper will be useful for the students in identifying different settlement patterns across different geographical settings.
- The paper will test the sincerity and discipline of the students in terms of geographical exercises conducted in the class through preparation of practical note-book.

Paper 501: REGIONAL GEOGRAPHY

Course outcomes:

- The paper deals with the physical and cultural attributes of the world in general and Asia in particular. This will broaden the perspectives of the students in terms of understanding geography at regional level.
- The students will gain an in-depth knowledge about both the physical and human aspects of India and also in the line of regional disparity.



- The paper will be useful for the students in realizing the regional geography of Assam and it will also assist the students in preparing for different competitive exams.

Paper 502: PRACTICAL ON CARTOGRAPHIC AND QUANTITATIVE METHODS

Course outcomes:

- The students will get to learn different cartographic methods for representing and interpreting socio-economic data. This will help the students in their project work.
- Understanding map projection and its significance will help the students in choosing surveying as a career option.
- The paper will be useful for the students in learning basic quantitative methods which can be applied to analyse geographical data and interpret the same.

Paper 601: ECONOMIC, POLITICAL AND ENVIRONMENTAL GEOGRAPHY

Course outcomes:

- The paper will introduce the students to the field of economics and resources from geographical perspective.
- The students will gain knowledge about the classifications of economic activity and the importance of agricultural and industrial activities at global context.
- The geographical approach towards understanding environment, its problems and political subject matter will help the students to relate present day environmental and political issues.

Paper 602: PRACTICAL ON MAP WORK AND INTERPRETATION

Course outcomes:

- The students will become skilled at preparing, reading and analysing different physical and cultural maps.
- The paper will provide an opportunity to the students to undertake a field study which will bring a comprehensive research development among the students.
- The task of preparing a practical notebook will develop the qualitative skill of the students.



GEOLOGY MAJOR

PROGRAMME OUTCOME

AND

COURSE OUTCOME

PRAGJYOTISH COLLEGE



B.Sc (Geology MAJOR) Programme

PROGRAMME OUTCOME

- The Bachelor of Science in Geology programme of Pragjyotish College under Gauhati University includes graded semester system which combines detailed theoretical knowledge, practical knowledge and extensive field survey/field work. The primary goals of this undergraduate programme are to provide students' academic competencies, ethical values and professional skills that facilitate their transition from undergraduate to post graduate work or professional positions.
- This programme inspires geology graduates to be life-long learners in a diverse global community and prepare them to pursue a geology career through innovative and hands-on engagement in the classroom, laboratory, and field. .
- Students will acquire a solid base of knowledge in the science of geology as a whole as well as earth materials, earth history, mineralogy, petrology and stratigraphy, deformational processes and structural features, and geomorphic processes and landforms.
- Students will understand how geologic resources form, how they can be exploit and use and about their economic value and resource areas.
- Students will develop proficiency in conveying complex geologic concepts in clear, technically correct writing; apply theoretical, conceptual, and observational knowledge to the analysis and solution of geologic data and problems.
- Students will develop proficiency in complex geologic concepts and communicate clearly and articulately their geologic knowledge, findings and interpretations in oral presentation.
- Students will develop the aptitudes and dispositions necessary to help democratize society by obtaining and maintaining employment as a professional geologist.
- Students will be able to Interpret, analyze, discuss, and critique topics about geological problems.
- They will be able to produce high quality written analyses of data, results, interpretations, and conclusions in a scientific format.
- As geology is mainly a field work based subject so students are to be trained to carry out extensive field work and to do advanced geological and scientific analysis, there by imparting practical knowledge/ hands- on training in the geological field work for augmenting practical/ professional knowledge which has implication in near future. Students will greatly strengthen their observational accuracy in the field, and this skill will translate into other aspects of data description and interpretation and they will gain new field experience, perspective, competence, and confidence as a field geologist.
- Students will develop the capability to produce geologic maps and cross sections of unknown terrains working individually and/or in groups. Production of geologic maps will allow students to demonstrate the capacity for synthesizing and interpreting field data and compiling that information into a working understanding of the assigned field area.



Course learning outcomes

FIRST SEMESTER

Paper 101: GENERAL GEOLOGY, GEOMORPHOLOGY AND BASIC PRINCIPLES OF REMOTE SENSING

1. This course is basically aims learning about the scope of geology, Earth and its relation to Universe, about the sedimentary flux: origin, transport and deposition.
2. Learning about the major surface features of the continents and ocean basins, Earth's interior, major internal processes of the Earth, Volcanism and Earthquake. They will be able to articulate the relationship between volcanoes, earthquakes, and mountain belts and tectonic plate boundaries.
3. Students will get a clear concept about topics related to geomorphology which includes the role of climate and tectonics on landscape development, weathering processes, mass wasting and hill slope evolution. They will understand the basic agents and processes that impact the Earth's surface including rivers, glaciers, wind and oceans.
4. They will study of basic concepts of remote sensing, various types of satellite images and aerial photographs and learn Basic principles of Photo geology and Photogrammetry thereby able to apply them in remote sensing and GIS tools to solve some real world issues and problems

PAPER 102: CRYSTALLOGRAPHY AND X RAY CRYSTALLOGRAPHY

1. Minerals are geological resources of major economic importance, most of them are crystalline which explains the important role played by crystallography in their study. So, this course includes concepts about process of crystallization and crystal growth, unit cell, point group and bravais lattice, study of various crystal systems and determination of axial ratio, parameters and indices.
2. Students will learn about crystal intergrowth and twinning, twin law and twinning types. They will be able to learn how to do crystallographic projection of different crystal systems.
3. They will get a basic idea about principles of X-Ray crystallography and mineral identification by X Ray diffractometry.

PAPER 103: PRACTICAL: CRYSTALLOGRAPHY AND GEOMORPHOLOGY

1. This paper includes Practical application of Crystallography and Geomorphology. By studying this course a student will be able to learn about the forms and symmetry elements of crystals belonging to different classes.
2. They will learn how to study different crystal models and hence determine twinning, to carry out stereographic projection and determine axial ratios.
3. To learn interpretation of different topographic maps and different geomorphic features



SECOND SEMESTER

PAPER 201: OPTICAL MINERALOGY

- 1) Optical mineralogy is used to identify the mineralogical composition of geological materials in order to help reveal their origin and evolution. In this course students will learn about scope and utility of optical mineralogy, basic ideas about properties of light (polarization, dispersion, reflection and absorption).
- 2) To study properties of isotropic and anisotropic mineral and their configuration. They will get concept of Optical indicatrix, isotropic minerals, anisotropic minerals; Mineral colour and pleochroism, Interference phenomena, Interference figures.
- 1) To learn about properties of various minerals in thin section and distinguishing optical property of some non-opaque mineral.

PAPER 202: PHYSICAL AND DESCRIPTIVE MINERALOGY

1. Physical mineralogy is concerned with the physical properties and descriptions of minerals. Minerals can be described using several physical attributes, including hardness, specific gravity, luster, colour, streak, and cleavage. In this course students will learn scope, classification and properties of mineral.
 - 1) They will study physical and optical properties of different groups of mineral for eg. Garnet, olivine, pyroxene, amphibole etc. and mineralogy of various individual minerals.
 - 2) Understand the importance of minerals to society and the various subfields of geology

PAPER 203: PRACTICAL: MINERAL HAND SPECIMEN AND OPTICAL MINERALOGY

1. Study and identification of different minerals is a very important part of mineralogy. In this practical class the students will get to know the physical and optical properties of minerals practically.
- 3) They will be able to classify, characterize, and identify major rock-forming minerals in hand specimen and thin section. Use identified minerals to infer conditions of associated geologic environments.



THIRD SEMESTER:

PAPER: 301: STRUCTURAL GEOLOGY AND GEOTECTONICS

1. This course combines subjects structural geology and geotectonics. After successful completion of this course, a student will be able to know accurate geometric description of the structures observed in natural deformed rocks.
2. They will learn the classification of faults and fractures, fold and fold systems, the terminology used to describe them and the means by which they are measured and analyzed
3. Know the types of foliation and lineation, their origin, and their relationship to folding and fabric.
4. Understand the concepts of stress and strain and their measurement, normal and shear stresses, the principal stress axes, hydrostatic and deviatoric stresses, the strain ellipse and its graphical representation, pure and simple shear, and progressive deformation.
5. They will learn basic concept about plate tectonics which includes different types of tectonic plate boundaries, how they operate and the resulting landforms or features occurred due to plate movement and classical concept about geosynclines
6. In this context they will have to study a brief outline of the structural features and tectonics of North East India.

PAPER 302: PETROLOGY

1. Petrology combines concepts of igneous, sedimentary and metamorphic geology.
2. Igneous petrology subject is intended to emphasize on how the final appearance of characteristics of igneous rocks is controlled by chemical and physical properties of magmas and their surroundings.
3. Study of igneous rocks is a key component of geology curriculum (because these rocks not only abundant throughout the crust of the Earth, but, dominate some crustal and upper mantle environments) that provides understanding of melt generation and crystallization mechanisms, diverse rock types and their link to tectonic settings. In this course the students will learn mode of occurrence, texture and structure of igneous rocks and classification of igneous rocks based on mineralogical and chemical criteria.
4. Sedimentary rocks are storehouse of many basic necessities of modern civilization viz. water, hydrocarbon etc. Major objective of the subject is to make students understand fundamentals, sedimentary processes and their products. Students will learn about texture and structures of sedimentary rock.
5. Dynamic nature of lithosphere leads to solid state transformations of rocks which hold clue to the past processes which are not possible to reconstruct by other means. This subject aims to enable students to identify critical data as well as provide theoretical basis for interpreting this data



past geodynamic processes, especially the orogenic events. In this subject students will learn basics of metamorphic petrology, types of metamorphism, depth zone of metamorphism.

6. And finally to learn about facies and facies series of metamorphism, textures and structures of metamorphic rock.

PAPER 303: PRACTICAL: EXERCISE ON GEOLOGICAL CONTOURED MAPS, STRUCTURAL PROBLEM AND GEOLOGICAL FIELD WORK

1. Students will learn how to read geologic maps and solve simple map problems using strike lines and cross sections for areas showing dipping strata, unconformities, faults and folds.
2. Learn how to use the stereographic projection to plot planar and linear data, determine angular relationships, solve rotational problems, and analyze complex structural data in areas involving folding and faulting.
3. This course includes a geological field work where students are trained to take readings like strike dip, plunge, pitch, front bearing, back bearing with the help of clinometer and brunton compass.

FOURTH SEMESTER

PAPER 401: CRYSTAL CHEMISTRY AND GEOCHEMISTRY

1. This course combines elementary concept of crystal chemistry and geochemistry.
2. In the crystal chemistry part students will learn concepts of isomorphism, atomic substitution, polymorphism, solid solution and geological thermometry.
3. They will get to know composition of meteorite which has a vast scope to do research work in the near future and distribution of major, minor and trace elements in different kind of rock.

PAPER 402: PETROLOGY 2

1. As study of rocks is the main component of geology so this petrology paper describes characteristics of igneous and sedimentary rocks in details and in addition to the third semester petrology course.
2. In this course students will learn Composition and crystallization of magma, thermodynamic process related to magmatic crystallization, mineralogical phase rule and study of Binary and ternary systems with various examples.
3. They will study about rock associations, Petrographic province and variation di Descriptive petrology and origin of different kind of rock families is included in this cours



4. In the sedimentary petrology part they will get to know classification and petrographic description of sedimentary rocks and Preliminary concept about sedimentary environment and facies.
5. Detailed petrographic description of different kind of sedimentary rocks is also included in this course.
6. Metamorphic Petrology part combines concepts of phase diagrams and reactions, Prograde and retrograde metamorphism, Characteristic mineral assemblage and mineral reactions of mafic, basic and calcareous rock.
1. Also they will get a clear concept about description and origin of Indian stratigraphic rock types.

PAPER 403: IGNEOUS AND METAMORPHIC PETROLOGY (PRACTICAL)

1. This practical course helps students to identify various types of igneous and metamorphic rocks in hand specimen and hence to study texture and structure of these rocks.
2. They will learn how to study and identify different rocks in thin section with the help of petrographic microscope.

FIFTH SEMESTER

PAPER 501: PRINCIPLES OF STRATIGRAPHY AND HISTORICAL GEOLOGY

1. The course is intended to familiarise the student with stratigraphic principles and nomenclature, major stratigraphic units, methods of stratigraphic correlation.
2. Students will understand basic principles of stratigraphy, different types of stratigraphic units and how they are named and different types of stratigraphic classification and nomenclature
3. Brief discussion about geological time scale and evolution of through the geologic time. They will understand the scientific basis for both relative and absolute ages in geologic time.
4. They will learn preliminary concepts of very emerging subjects of geology related to sequence stratigraphy, magneto stratigraphy and seismic stratigraphy.



PAPER 502: INDIAN STRATIGRAPHY

1. This course is intended to study various depositional environments and tectonostratigraphic framework of various lithostratigraphic units of India spanning Archaean to Holocene, and mass extinction boundaries.
2. Know the crustal evolution during the Precambrian in peninsular India and how the biosphere responded to the Precambrian-Cambrian boundary events.
3. Appreciate how plate tectonic movements separated India from contiguous landmasses and shaped the depositional basins of the Indian Phanerozoic, and what were their effects on climate and life.
4. Learn about large igneous provinces and their role in mass extinction events and important mass extinction boundary sections.
5. Gain knowledge on stratigraphy and sedimentation in India – Asia continental collision zone and Himalayan foreland basin.

PPAER 503: PALAEOLOGY AND SOIL GEOLOGY

1. This course intend to give the students a basic idea about palaeontology which includes mode of preservation of fossil and importance of fossil in in various aspects of geological studies.
2. They will learn study of morphological characteristics and geological distribution of various classes for eg. Foraminifera, brachiopoda, Anthozoa, Mollusca, Arthropoda, Echinodermata and Graptoloidea.
3. They will gain knowledge about plant fossils of India with special reference to Gondwana flora and their palaeogeographic significance.
4. They will study evolutionary trend of Man, Proboscidea and Equidi from the study of vertebrate fossils.
5. Mropaleontology, the science of microfossils and nannofossils has become very important due to its significance in deciphering paleoclimate and its use in oceanographic studies. In this course students will study microfossil and their importance in oil exploration.
6. To study process of formation and physical properties of soil , study soil types found in India and their erosion and mode of conservation.



PAPER 504: HYDROGEOLOGY, REMOTE SENSING AND GIS

1. Water is a basic life supporting system. The rise in global population and the quest for better living standard has greatly stressed the water resources. The course content primarily focuses on groundwater, which being easily available is amenable to greater exploitation. Thus this course aims to enable students to acquire knowledge about the physical and chemical attributes, occurrence, movement and exploration of the groundwater resources. The students will learn about occurrence of groundwater, water bearing properties of formations, aquifer types and aquifer parameters.
2. The course imparts knowledge about water table definition and location, and how to select sites for sinking wells, construction, design and development of water wells,
3. The students will get an idea about basics of remote sensing, how sensors work, about the geostationary satellites with special reference to Indian Satellites. They will learn about the application of remote sensing in geomorphological, structural and lithological mapping and natural hazard mitigation and basics of GIS and data analysis.

PAPER: 505: PRACTICAL: SEDIMENTARY PETROLOGY AND PALAEOLOGY

1. This practical course compiles concepts of practical application of sedimentology and palaeontology.
2. The students will learn about how to determine the textural properties of sediments and study, identify different types of sedimentary rocks in hand specimen and different sedimentary structures.
3. Identification of heavy minerals in thin section and study of limestone.
4. In the palaeontology part students will learn identification of different genera of fossils by their external morphology and stratigraphic ranges.
1. They will study interpretation and determination of stratigraphic range from the fossil assemblages from Cretaceous of Trichinopoly and Jurassic of Kutch.

PAPER 506: PRACTICAL: SURVEYING, INDIAN STRATIGRAPHIC ROCK AND GEOLOGICAL FIELD WORK

1. This course aims to teach the students how to do topographic survey with the help of Plane Table and Prismatic Compass(both open and closed)
2. Then to measure front bearing and back bearing with the help of clinometer and brunton compass.
3. They will get to know study and identification of different Indian Stratigraphic Rock.



4. As geology is mainly a field study oriented subject so students have to go for a minimum of ten days field work where they will learn how to take different measurements in field and finally plotting of all those measurement in a map and prepare geological mapping.
5. They will have to visit different industrial belts, mining sites and drill sites to acquire knowledge about how different industries operate geological work.

SIXTH SEMESTER

PAPER 601: ORE GENESIS AND PROSPECTING

1. In this course they will get a detailed concept about the process of formation of economic mineral deposit, mode of formation of ore deposit and classification of economic mineral deposit.
2. To learn about structural, physico-chemical and stratigraphic control of ore localization.
3. To learn about different methods of prospecting.

PAPER 602: INDIAN MINERAL DEPOSITS AND MINERAL ECONOMICS

1. In this course students will study the mineralogy, mode of occurrence, origin and use of the metallic mineral deposits, non-metallic mineral deposits.
2. They will learn about different geology and use of different industrial raw materials.
3. To give them an idea about mineral economics, strategic, critical and essential minerals and national mineral policy.

PAPER 603: ENVIRONMENTAL GEOLOGY AND ENGINEERING GEOLOGY:

1. To study natural and anthropogenic hazards, landslide and flood and their impact on environment. They will become able to describe the different types of landslides and how to recognize their potential in the field.
2. To study impact of mining on environment, environmental pollution and seismic hazard. Become aware of the scientific limitations on earthquake prediction and the relatively easy reduction of damage from earthquakes through seismic hazard zoning, building codes and public education
3. To familiarize students about role of geologist in various engineering construction sites for eg. Tunnels, dam, highways and bridges.
4. To study of landslide, their causes and mitigation from engineering point of view.



PAPER 604: FUEL GEOLOGY AND MINING GEOLOGY

1. To get the understanding about the mechanism of hydrocarbon generation from organic material
2. To learn the relationship between temperature, pressure and other physical parameters and its effect on distribution and migration of hydrocarbons.
3. To study oil fields of NE India.
4. To comprehend fundamentals of coal, definition and coal forming sedimentary environments, definition and to understand analytical techniques in coal and its importance in coal classification and utilization for various industries, concept of macerals, its gross diagnostic properties under microscope and implications in climate and paleogeography.
5. To study mineralogy, mode of occurrence and atomic mineral deposits of India.
6. Study of mining geology where students will get to know about methods of open cast and underground mining and methods of sampling.

PAPER 605: PRACTICAL: ECONOMIC GEOLOGY, RESERVE ESTIMATION AND ORE MICROSCOPY, REMOTE SENSING AND HYDROGEOLOGY:

1. This course intends to familiarize students with common ore minerals and their identifying criteria at various scales of study.
2. To identify and study economic mineral assemblages required for various industries.
3. To calculate ore reserve estimation and microscopic study of ore minerals.
4. Use of stereoscope and visual interpretation of satellite images.
5. Preparation and interpretation of water table maps and analysis of rainfall data.

PAPER 606: PRACTICAL: ENGINEERING GEOLOGY, COAL GEOLOGY, SEMINAR PRESENTATION AND GENERAL VIVA VOCE

1. Students will learn how to determine different engineering parameters of soil including plastic limit, liquid limit, and shear strength parameters.
2. Study of coal in hand specimen and thin section.
3. Seminar presentation on topic related to their course.



B.Sc. (Geology General) Programme

PROGRAMME OUTCOME

- The Bachelor of Science in Geology (General) programme of Pragjyotish College under Gauhati University includes graded semester which combines basics of all subject's theoretical knowledge, practical knowledge and field survey/field work to train students in advanced geological and scientific analysis there by imparting practical knowledge/ hands- on training in the geological field work for augmenting practical/ professional knowledge which has implication in near future.
- Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviors that students acquire as they progress through the program. The geology general programme will produce graduates who have—
- An ability to apply knowledge of geology in various branches of science and ability to design and conduct experiments, as well as to analyze and interpret geological data.
- An ability to formulate or design a system, process or programme to meet desired needs and function on multidisciplinary teams.
- An ability to identify and solve geological problems and understanding of professional and ethical responsibility.
- An ability to communicate effectively and the broad education necessary to understand the impact of geological solutions in a global economic, environmental and societal context.
- This programme inspires any graduates having geology as general course to be life-long learners in a diverse global community and prepare them to pursue a geology related career through innovative and hands-on engagement in the classroom, laboratory, and field. .

Course learning outcomes:

FIRST SEMESTER

Paper 1.1: GENERAL GEOLOGY AND STRUCTURAL GEOLOGY

1. Learning about introduction to geology, Earth and its relation to Universe.
2. Learning about Basics of petrology and the major surface features of the continents and ocean basins and to learn geological actions and landforms introduced by rivers, wind, glaciers, sea and their associated landforms.



3. Accurate geometric description of the structures observed in natural deformed rocks, for eg Foliation, Lineation, Fold, Fault, Fractures and joint.
4. Basic description about various process of deformation—stress, strain behaviour of rocks under stress.

. SECOND SEMESTER

PAPER 1.2: CRYSTALLOGRAPHY, MINERALOGY, OPTICAL MINERALOGY

4. Learning about process of crystallization and crystal growth, unit cell, point group and bravais lattice. 2.
5. Study of various crystal systems and determination of axial ratio, parameters and indices.
6. To learn scope, classification and properties of mineral.
7. To study physical and optical properties of different groups of mineral for eg. Garnet, olivine, pyroxene, amphibole etc. Study of mineralogy of various individual minerals.
8. To learn about scope and utility of optical mineralogy.
9. To study polarization, dispersion, reflection and absorption of light.
10. To study properties of isotropic and anisotropic mineral and their configuration.
11. To learn about properties of various minerals in thin section and distinguishing optical property of some non-opaque mineral.

THIRD SEMESTER:

PAPER 3.1: PETROLOGY: IGNEOUS AND METAMORPHIC

1. In this course the students will learn mode of occurrence and texture and structure of igneous rocks.
2. Classification of igneous rocks based on mineralogical and chemical criteria.
3. Basics of metamorphic petrology, types of metamorphism, depth zone of metamorphism.
4. They will learn about facies and facies series of metamorphism, textures and structures of metamorphic rock.

PAPER P3.1: PRACTICAL: CRYSTALLOGRAPHY, PHYSICAL AND OPTICAL MINERALOGY AND GEOLOGICAL FIELD WORK



4. To learn about the forms and symmetry elements of crystals belonging to different classes.
5. To study different crystal models and hence determine twinning.
6. To learn stereographic projection and determine axial ratios.
7. Study and identification of different minerals is a very important part of mineralogy. In this practical class the students will get to know the physical and optical properties of minerals practically
8. Geological field work where students are trained to take readings like strike dip, plunge, pitch, front bearing, back bearing with the help of clinometer and brunton compass.

FOURTH SEMESTER

PAPER: 4.1: SEDIMENTARY PETROLOGY AND PALAEOONTOLOGY

1. Sedimentary rocks are storehouse of many basic necessities of modern civilization viz. water, hydrocarbon etc. Major objective of the course is to make students understand fundamentals, sedimentary processes and their products.
2. Students will learn about texture and structures of sedimentary rock.
3. To get basic idea about palaeontology, mode of preservation of fossil and importance of fossil in in various aspects of geological studies.
4. To study of morphological characteristics and geological distribution of various classes for eg. Foraminifera, brachiopoda, Anthozoa, Mollusca, Arthropoda, Echinodermata and Graptoloidea.
5. To gain knowledge about plant fossils of India with special reference to Gondwana flora and their palaeogeographic significance

PAPER: 4.2: Practical: Palaeontology and rock hand specimen

2. Students will learn identification of different genera of fossils by their external morphology and stratigraphic ranges.
3. Interpretation and determination of stratigraphic range from the fossil assemblages from Cretaceous of Trichinopoly and Jurassic of Kutch.
4. Students will know how to study and identify different kinds of rocks(igneous, sedimentary and metamorphic) in hand specimen.

FIFTH SEMESTER



Paper 5.1: ECONOMIC GEOLOGY AND PROSPECTING, INDIAN MINERAL DEPOSITS, HYDROGEOLOGY, REMOTE SENSING AND ENVIRONMENTAL GEOLOGY

4. To understand the process of formation of economic mineral deposit, mode of formation of ore deposit and classification of economic mineral deposit.
5. To learn about different methods of prospecting.
6. In this course students will study the mineralogy, mode of occurrence, origin and use of the metallic mineral deposits, non- metallic mineral deposits
7. Study of basic concepts of remote sensing and various types of satellite images and aerial photographs.
8. To study natural and anthropogenic hazards, landslide and flood and their impact on environment.
9. To study impact of mining on environment, environmental pollution and seismic hazard.

Paper P 5.1: ECONOMIC MINERALS, PETROLOGY AND GEOLOGICAL FIELD WORK

6. To familiarize students with common ore minerals and their identifying criteria at various scales of study.
7. To identify and study economic mineral assemblages required for various industries.
8. They will learn Identification of various rocks in hand specimen and To study texture and structure of different rocks.
9. Study and identification of heavy minerals in thin section.
10. As geology is mainly a field study oriented subject so students have to go for a minimum of ten days field work where they will learn how to take different measurements in field and finally plotting of all those measurement in a map and prepare geological mapping

Paper 6.1: PRINCIPLES OF STRATIGRAPHY, INDIAN STRATIGRAPHY AND GEOTECTONICS

The course is intended to familiarise the student with stratigraphic principles and nomenclature, major stratigraphic units, methods of stratigraphic correlation etc.

Course learning outcome—

5. Understand basic principles of stratigraphy, different types of stratigraphic units and how they are named.
6. Brief discussion about geological time scale and evolution of through the geologic time.
7. Different types of stratigraphic classification and nomenclature.
8. Know the crustal evolution during the Precambrian in peninsular India and how the biosphere responded to the Precambrian-Cambrian boundary events.
9. Appreciate how plate tectonic movements separated India from contiguous landmasses and shaped the depositional basins of the Indian Phanerozoic, and what were their effects on



climate and life.

10. To familiarize students about role of geologist in various engineering construction sites for eg. Tunnels, dam, highways and bridges

Ppaer 6.1 P: GEOMORPHOLOGY, GEOLOGICAL MAPS, STUCTURAL PROBLEMS AND HYDROGEOLOGY

1. To learn interpretation of different topographic maps and different geomorphic features.
2. Detailed interpretation of geologic contoured map
3. Use and interpretation of structural problems on stereographic net
4. Geological field work where students are trained to take readings like strike dip, plunge, pitch, front bearing, back bearing with the help of clinometer and brunton compass
5. The students will learn about occurrence of groundwater, water bearing properties of formations, aquifer types and aquifer parameters.
6. The course imparts knowledge about water table definition and location, and how to select sites for sinking wells.



HINDI DEPARTMENT

COURSE OUTCOMES

FIRST SEMESTER

PAPER HIN /M/104

HINDI SAHITYA KA ITIHAS : ADIKAL AUR BHAKTIKAL

CO. 1. To understand the literatures of Adikal and Bhaktikal in context of socio- economic , cultural and political condition of those periods .

CO.2. To identify the all eminent Hindi writers of Adikal and Bhaktikal .

Paper : HIN/M/105

BHAKTIKALIN KAVYA DHARA

CO.1. To understand the philosophy of life as well as literature of Vidyapati .

CO.2. To study the writings of Bhaktikalin Sant poet Kabirdas and Jaysi .

CO.3. To study the Krishna bhakti and Ram bhakti poem of Surdas and Tulsidas along with their philosophy of bhakti culture and its impact on our day to day life .

CO. 4. To understand the philosophy of life as well as literary works of Dadudayal , Mirabai and Raskhan.

SECOND SEMESTER

PAPER : HIN/M/204

HINDI SAHITYA KA ITIHAS : RITIKAL

CO. 1. To understand the basis of the name Ritikal .

CO.2. To know the basis of the name of Ritibadha, Ritisidha ,Ritimukta .

CO. 3. To understand the whole literatures of Ritikal and its characteristics .

CO.4. To identify and analysis the eminent Hindi writers and their literatures of Ritibadha ,Ritisidh Ritimukta .



CO. 5. To analysis the development of Khariboli gadya .

Paper : HIN/M/205

RITIKALIN KAVYA – DHARA

CO.1. To study the eminent Hindi writers of Ritikal and their various skills of writings

CO.2. To understand the philosophy of life as well as poetry of Keshavdas ,Ghananand ,Dev.

CO. 3.To understand the content and the skill of writings of Bihari in context of the socio – cultural condition of Ritikal.

CO. 4.To know about the progressive spirit of Bhusan along with his skill of writing in poetry .

CO.5. To get an idea about the life and literary works of Chintamani Tripathi , Senapati and Matiram .

THIRD SEMESTER

PAPER : HIN/M/304

ADHUNIK HINDI KAVYA- DHARA KA ITIHAS

CO.1. To understand the literature and characteristics of Adhunik kal in context of socio – economic cultural and political condition of that period .

CO. 2. To study the literature of Bharatenduyugin kavyadhara , Dwivediyugin kavyadhara , Chhayavadyugin kavyadhara , Chhayavadottar kavyadharayen .

CO. 3. To identify and analysis the eminent Hindi writings of Bharatenduyug, Dwivediyug , Chhayvad, chhayavadottaryug and their various skills of writings .

PAPER :HIN/M/305

BHARATIYA KAVYA SHASTRA

CO. 1.To understand the Indian poetics .

CO.2. To study about kavya ,Ras , Alankar and Chhanda



CO.3. To study definition , kinds, importance of Ras and to get an idea of Alankar , Riti , Dhvani and Vakrokti Sampradayas in Indian context .

PAPER : HIN / M/ 404

CHHAYAVAD - PURV EVANG CHHAYAVADYUGIN KAVYADHARA

CO.1. Able to know about the literature of Maithilisharan Gupta , Makhanlal Chaturvedi , Balkrishna Sharma Naveen .

CO.2. To learn values of hope and able to know literary trends of Chhayavad .

CO. 3. Able to know about Chhayavadi writers Jayshankar Prasad , Nirala , Pant , Mahadevi Varma , Dinkar.

PAPER :HIN/M/405

CHHAYAVADOTTAR KAVYADHARA

CO.1.To study eminent poet of Chhayavadottar and Samakalin poetry .

CO.2. To understand the poems of Ajneya by relating its with his experience and philosophy of his life .

CO. 3.To understand the thoughts of Kedarnath Singh , Dharmveer Bharti, Nagarjun , Shamsheer Bahadur Singh , Dhumil , Liladhar Jaguri.

CO. 4.To describe the philosophy of life as well as poem of ' Ye Danturit Muskan' by Nagarjun .

CO.5.To understand the fantasy and thoughts of Muktibodh .

FIFTH SEMESTER

PAPER :HIN/M/501

HINDI KA UPANYAS SAHITYA

CO. 1.To get an idea about Novel , its importance , history etc.

CO. 2.To understand the vision of Premchand and his concern for strengthening the freedom movement in India through 'Karmabhumi' novel .

CO.3.To understand the views of Bhagawaticharan Verma through 'Chitralkha'.



CO. 4. To study the life history and literary works of Devakinandan Khatri , Jainendra Kumar and Phanishwar Nath Renu.

PAPER :HIN/M/502

HINDI KA KAHANI SAHITYA

CO.1. To get an idea about short story , its definition , importance, concept , characteristics , history etc.

CO.2. To understand the change in content and style of expression of eminent Hindi short story writers through their stories .

CO. 3. To describe the philosophy of life as well as literary contribution of Chandradhar Sharma Guleri , Premchand and Yashpal .

PAPER :HIN/M/503

HINDI KA NATAK SAHITYA

CO.1. To get an idea about Drama , its importance , concept , characteristics , history etc.

CO. 2. To understand the vision of Jayshankar Prasad through the drama 'Ajatsatru.'

CO. 3. To understand the life history of Kalidas through 'Asharh Ka Ek Din' written by Mohan Rakesh .

CO.4. To get an idea of life history and literary contribution of Lakshmi narayan Mishra , Harikrishna Premi and Lakshminarayan Lal .

PAPER :HIN/M/504

HINDI KA EKANKI SAHITYA

CO.1. To study one- act play , its definition , importance ,concept , characteristics , history etc.

CO. 2. To understand various thoughts and technique of eminent Hindi one –act play writers through their work.

CO3. To get an idea of life history and literary contribution of Sumitranandan Pant , Dharmavir Bharti and Bhuwaneshwar Prasad .



PAPER :HIN/M/505

HINDI KA NIBANDH SAHITYA

- CO. 1.** To study essay ,its importance , concept , , history etc.
- CO.2.** To understand various thoughts of eminent Hindi essay writers .
- CO.3.** To understand various thoughts of Hazari Prasad Dwivedi through ‘ Ashok Ke Phool’ .
- CO. 4.** To get an idea of life history and literary works of Balmukund Gupta , Rahul Sankrityayan and Harishankar Parsai .

PAPER :HIN/M/506

HINDI ALOCHANA EVANG PRAMUKH ALOCHAK

- CO.1.** To study criticism, its definition, importance , concept ,kinds , history etc.
- CO .2.** To understand the contribution and various views of eminent Hindi critics , like Ramchandra Shukla , Hazariprasad Dwivedi , Nandulare Vajpayee , Ramvilas Sharma and Dr. Nagendra .

PAPER :HIN/M/601

PASHCHATYA KAVYASHASTRA

- CO.1.** To understand the Western Poetics .
- CO.2.** To understand the various views of eminent Western critics like Plato, Arastu , Dr. Samuel Jhonson, William Wordsworth , Mathew Arnold ,I. A.Richards .
- CO.3.** To know about the Western literary trends of Romanticism , Idealism, Realism , Existentialism.

PAPER :HIN/M/602

BHASHAVIJNAN

- CO.1.** To understand the meaning ,concept, characteristics , kinds , development of a language .
- CO. 2.** To understand the meaning , concept ,kinds and different part of linguistics . It is a complete paper on linguistics .



PAPER :HIN/M/603

HINDI BHASHA EVANG DEVNAGRI LIPI

- CO. 1.**To know about the origin of Hindi language .
- CO.2.** To know about the meaning , its history , Hindi speaking area etc.
- CO. 3.**To identify the dialects of Hindi language .
- CO.4.** To understand the phonetics of Hindi language .
- CO. 5.**To know sentence making of Hindi .
- CO. 6.**To understand Hindi grammar which help students to become creative writers as well as they will speak and write Hindi language without any mistake .
- CO. 7.**To know about script of Devnagri .

PAPER :HIN/M/604

PRAYOJANMULAK HINDI EVANG ANUVAD

- CO.1.** To understand the various forms of Functional Hindi .
- CO.2.** To study the meaning and area of application of Functional Hindi .
- CO. 3.**To understand the uses of Hindi in various field .
- CO. 4.**To study the official language Acts of 1963 and 1976 .
- CO.5.** To know about different types of official letters and students able to know how to write letters .
- CO.6.** To know about technical terms of Hindi language .
- CO. 7.**To practice of annotation writing , report writing , condensation writing .
- CO. 8.**TO acquire good knowledge of translation .
- CO.9.** To learn about translation from English to Hindi they can become translator , interpreter etc.
- CO. 10.** Students can easily be employed in various sector after successfully completing this paper .
- CO.11.** To learn communicative skill .



PAPER :HIN/M/605

PRADESHIK SAHITYA: ASAMIYA

- CO.1.** To know about origin and development of Assamese language .
- CO.2.**To obtain information about Assamese culture , tradition etc.
- CO.3.** To understand the history of Assamese literature .
- CO.4.**To know about philosophy of Shankardev and Madhavdev through their Bargeet .
- CO.5.** To understand various thoughts and style of expression of eminent Assamese poet and short story writers .
- CO. 6.**To get an idea of life sketch and literary contribution of Padmanath Gohain Baruah , Nalinibala Devi and Surjya Kumar Bhuyan .

PAPER :HIN/M/606

PARIYOJANA KARYA (PROJECT WORK)

- CO.**The aim of the project work is to literature survey on life and literary works of a greatest writer of Hindi language .

MIL

FIRST SEMESTER

FIRST PAPER

HINDI KAVYA- DHARA

- CO.1.** To learn values of Kabirdas , Shankardev , Surdas ,Tulsidas and Mirabai through their poems .
- CO.2.** To understand the change in content and style of expression of eminent Hindi poet .
- CO.3.** To describe the philosophy of life history as well as literary contribution of Vidyapati , Bharatendu Harishchandra and Ramdhari Singh 'Dinkar' .



SECOND SEMESTER

SECOND PAPER

HINDI KATHA SAHITYA

- CO. 1.** To understand the philosophy of Premchand about a woman of middle class through 'Nirmala'.
- CO. 2.** To study the literary trends of Hindi short stories .
- CO. 3.** To study the life history and literary works of Jayshankar Prasad , Yashpal and Rangeya Raghav .

THIRD SEMESTER

THIRD PAPER

HINDI NIBANDH SAHITYA

- CO.1.** To study the literary trends of Hindi essay writings .
- CO. 2.** To study the various views and change in style of expression of eminent Hindi essay writers through their essay writings .
- CO. 3.** Able to know about life and literary contribution of Shyamsundar Das , Vasudevsharan Agarwal and Harishankar Parsai .
- CO. 4.** To acquire more knowledge on current topics and literature and able to know how to write an essay.

FOURH SEMESRTER

FOURTH PAPER

HINDI NATYA SAHITYA

- CO.1.** To understand the vision of Lakshminarayan Mishra through the drama 'Sindur Ki Holi'.
- CO. 2.** To study the literary trends of Hindi one act play .
- CO.3.** To know about the eminent Hindi one Act play writers through their writings .
- CO. 4.** To get an idea about life history and literary contribution of Bhagawaticharan Varma , Udayshankar Bhatta and Lakshminarayan Lal .



PROGRAMME OUTCOMES

- PO:1** Understanding the origin of Hindi language and its literature .
- PO:2** Understanding the literary ,cultural , social , biographical and historical background
Of the eminent Hindi writers.
- PO:3** Acquiring good knowledge in Hindi .
- PO:4** Learning about thoughts and values of eminent Hindi writers .
- PO:5** Understanding the relation between literature and society .
- PO:6** Getting information about various literary trends and forms of poetry and prose .
- PO:7** Knowing Hindi , students can easily be employed as a hindi officer , hindi professional translator,
hindi assistant ,rajbhasha assistant , interpreter , editor , reporter of a news paper , script writer ,
dialogue writers etc.
- PO:8** Helping the Hindi speaking or non Assamese students to know about Assamese language and its
literature .
- PO:9** Getting knowledge about real life of various social classes of people.
- PO:10** Developing writing and communicative skills .
- PO:11** Encouraging creative writings .
- PO:12** Developing self confidence .
- PO:13** Gaining socio cultural consciousness .
- PO:14** Getting knowledge of woman empowerment .
- PO:15** Understanding how to work literature survey of great writers of Hindi language



History Department

Pragjyotish College

Programme Outcome

- Students will develop an informed familiarity with multiple cultures
- Students will understand the basic skills that historians use in research and writing
- Students will develop the ability to distinguish between fact and fiction while understanding that there is no one historical truth
- Students will demonstrate their understanding of knowledge of the general chronology of human experience
- Students will understand the basic tools of historical analysis and value of diversity

Course Outcomes		
Course Code	Title	Description
101	Introduction to History	Aim of the course is to acquaint the students with the meaning and scope of History; Categorization of History; History and other Disciplines; and Traditions of Historical writing.
102	History of India (up to A. D. 300)	Aim of the course is to acquaint the students with the Introduction to Geographical background of India and Survey of sources . The paper also deals with Proto-History, State formation in the 6th century B.C.; and Post-Mauryan invasions and their impact.
203	History of India (300-1200 A. D.)	The objective of the paper is to acquaint the students with the Age of the Guptas, Post-Gupta period, Rise of Regional powers and Foreign Invasions.
204	History of Ancient Civilizations of the World	The aim of the course is to acquaint the students with Ancient Egypt, Ancient Mesopotamia, Chinese Civilization, Ancient Greece and Ancient Rome.
305	India under the Turko-Afghans	The aim of the course is to acquaint the students with the Survey of sources of early medieval India, Foundation and Consolidation of the Sultanate, Fragmentation of the Sultanate and Rise of Provincial Kingdoms . The course also deals with State, Society and Economy of the Sultanate period.



306	History of Assam (5th Century A. D. to 1228)	The objective of the course is to acquaint the students with the sources of ancient Assam history, a brief history of Society, Economy, Religion, Ruling Dynasties and Political institutions. The paper also deals with invasions from the West and Emergence of petty Chieftains in Western Assam and Eastern Assam.
407	India Under the Mughals	The objective of the course is to acquaint the students with the Advent of the Mughals and thier struggle for existence, Consolidation and territorial expansion of Akbar, Jahangir, Shahjahan, Aurangzeb; Mughal Administration and Institutions- Administrative structure, Land-Revenue system, Mansabdary system, Zamindari and Jaigirdari systems.The paper also deals with Religious policy of Akbar and Aurangzeb; Society and Economy, Trade and commerce under the Mughals; Rise of the Maratha Power under Shivaji and his Administrative structure, Revenue system; Disintegration of the Maratha power ; Decline of the Mughal Empire and the advent of the Europeans.
408	History of Europe (1453-1789)	The objective of the course is to acquaint the students with the Transition of Europe from Medieval to Modern Age,Thirty Years War: Causes and effects, Rise of Prussia and Austria; Genesis and growth of Capitalism, Imperialism, Mercantilism; World Conflict and Evolution of World Politics; the Maritime ascendancy of Holland and its collapse, The Anglo- French struggle and triumph of British imperialism.
509	India under the East India Company	The objective of the course is to acquaint the students with the Background of Political, Social and Economic changes in mid eighteenth century in India, Tools of British expansion,Consolidation of British rule in India, Administrative system-Central, Provincial, District and Judicial administrative system, Land Revenue settlements, Impact of Colonial Rule on Rural Economy; Popular resistance to Company's rule and Revolt of 1857: causes, nature, and results
510	History of Assam (1228-1826)	The objective of the course is to acquaint the students with the Sources of Assam history, Political Condition of the Brahmaputra Valley at the beginning of the 13th Century,Foundation and consolidation of Ahom Rule , The kingdom of Kamrup-Kamata, Rise and decline of the Kock kingdom, Mughal invasion and Ahom resistance, Zenith of the Ahom Rule and Internal Dissension, Political institutions, Society, Economy and Religion;Ahom and Koch administrative systems;Ahom Tribal Relations; and a Brief outline of Society, Economy and Religion.
511	History of Europe (1789-1870)	The objective of the course is to acquaint the students with The French Revolution, Rise and Fall of Napoleon, The Congress of Vienna,The European State System after Napoleon, Concert of Europe, Revolutions of 1830 and 1848 and their repercussions, Eastern Question, Napoleon III , and The Unification of Italy and Germany.



512	History of Science and Technology in Pre-Colonial India	The objective of the course is to acquaint the students with the Stone Age technology, Iron Age culture: Use of iron and its impact, Painted gray ware (PGW) and Northern Black polished ware (NBPW) cultures, Early developments in science and technology: Aryabhata, Varahmihira, Brahmagupta, Bhaskara I, Charaka and Technological developments in Medieval period- Persian wheel, Agro.industries, metal technology, gun-powder, textiles, bridge-building etc. of India.
513	History of Great Britain (1485-1820)	The objective of the course is to acquaint the students with England under the Tudors: Transformation from feudalism to absolute monarchy, The Renaissance and Reformation in England, Colonial and Commercial development; England under the Stuarts: Conflict between the Crown and Parliament, The Establishment of the Commonwealth and Protectorate under Cromwell, The Restoration of monarchy; Constitutional Developments: Bill of Rights, Act of Settlement, Evolution of Cabinet system of government under the Hanoverians; and Industrialization and its Social impact.
514	History of China (1839-1949)	The objective of the course is to acquaint the students with China in the 19th Century: Condition of China before the advent of the imperialist powers, Canton commercial system; Opening of China: Opium Wars, treaties with the imperialist powers; struggle for concession in China , Increasing Western economic interest; Popular and Reform Movements:Taiping; self-strengthening and reforms in the Chinese states,Boxer Rebellion and its consequence; Emergence of Nationalism in China: Revolution of 1911, Sun Yet Sen, Emergence of the Republic; and Growth of Communism in China: Political crisis in the 1920's, Communist movement of 1928-1949, Mao Tse Tung.
615	India under the Crown	The objective of the course is to acquaint the students with British administrative changes after the Revolt of 1857: Act for the Better Government of India (1858), Queen's Proclamation, Provincial administration,Local Bodies, Changes in the Army; Cultural Awakening in the 19th century: Spread of Western Education-Emergence of Intelligentsia, Growth of Press,Social Reform Movements: Arya Samaj, Brahma Samaj, Prarthana Samaj, Theosophical Society, Aligarh Movement, Ramakrishna Mission; Indian Nationalism: Emergence of the Indian National Congress, Moderates and Extremists, Partition of Bengal and Swadeshi Movement, National Movement under Gandhi : Non-Co-Operation Movement, Growth of Revolutionary activities, Communal consciousness, Civil Disobedience Movement, Quit India Movement; Partition of India and Women's participation in the Freedom Struggle in India.



616	History of Assam (1826-1947)	Aim of the course is to acquaint the students with the Advent of the British into Assam, Administrative Reorganization under David Scott, Annexation of Lower Assam, Anti-British uprisings (1826-1830), Annexation of Upper Assam, Repercussions of the Revolt of 1857; Territorial Expansion: Cachar, Manipur, Jayantia Hills, Khasi Hills, Garo Hills, Naga Hills, Lushai Hill; Changes in the Economic structure: Agrarian System, Growth of modern industries- Tea, Coal and Oil, Development of Transport and Communication; and Political Awakening: Education, Press, Public Associations, National Movement in Assam- Swadeshi Movement, Non-Cooperation movement, Civil-Disobedience movement, Quit India movement and Role of women in the Freedom struggle in India.
617	History of Europe (1871-1945)	Aim of the course is to acquaint the students with the Internal developments in France: The Republican Constitution of 1875, Relations between the State and the Church, Internal Developments in Germany and Italy: Kulturkampf, Economic Developments in Germany, Socialism and the German Reich, Internal Developments in Italy; Internal problems of Russia up to 1917: Revolution of 1905, Revolution of 1917; World War I and aftermath: Factors responsible for the World War I, Peace settlement, The League of Nations: Achievements and Failures; and World War II: Origin, Entry of U S A, Defeat of the Axis Power.
618	World since 1945	Aim of the course is to acquaint the students with the UNO- Structure, Difference with the League of Nations, Peace-keeping and other activities of UNO, Cold War; Conflict in the Middle-East: Arab- Israel Conflict, Suez Crisis of 1956, Iran-Iraq war, The Gulf War (1970-91); China- Korean War, Vietnam; and Africa after Decolonization- Problems of the African states: Ghana, South Africa.
619	History of Japan (1853-1941)	Aim of the course is to acquaint the students with the Tokugawa Shogunate: End of Isolation, Commodore Perry and the Treaty of Kanagawa (1854), The Harris Treaty; Meiji Restoration: Processes of modernization in Social, Military, Economic and Political field, End of Feudalism, Meiji constitution; Emergence of Japan as a world power: Sino-Japanese Relations, Anglo-Japanese Alliance, Russo-Japanese war; and Japan between the two world wars; Washington Conference, Rise of Militarism, Manchurian crisis and aftermath.
620	Project	Aim of the course is to acquaint the students with field study, collection of data, compilation of data and coming to a conclusion about the impact on society of the particular subject. It develops the idea of research among the students.
1.1	Early India up to 1200 A.D.	The objective of the course is to acquaint the students with Ancient Civilizations of India; Condition of India in the 6th century B.C; Emergence of Territorial States & Foreign invasions; Rise of Regional Powers in the Post Gupta period and Post Harshavardhana Polity.



2.2	Early Assam up to 1228 A. D.	The objective of the course is to acquaint the students with brief survey of the sources of ancient Assam; Ancient Assam Society, Economy, Religion, Political dynasties and Political Institutions.
3.3	History of India (1206-1526)	The objective of the course is to acquaint the students with Survey of Sources of medieval India; Foundation and consolidation of the Sultanate; Expansion of the Delhi Sultanate; The Rise of Provincial kingdoms; and State, Society and Economy of medieval India.
3.4	History of Assam (1228-1826)	The objective of the course is to acquaint the students with Rise of Territorial States: Foundation and consolidation of the Ahom kingdom, The kingdom of Kamrup-Kamata, Emergence of the Koch power; Ahom-Mughal Conflicts; Zenith of the Ahom rule; Decline and downfall of the Ahoms; and Political Institutions, Society and Economy of medieval Assam.
4.5	History of India (1526-1757)	The objective of the course is to acquaint the students with the Advent of the Mughals and territorial expansion; Rise of the Afghans under Sher Shah Sur and his administration; Mughal administration; Rise and disintegration of the Maratha power and the Advent of the Europeans.
4.6	History of Europe (1453-1815)	The objective of the course is to acquaint the students with the Transition of Europe from medieval to Modern Age; Renaissance and its impact on Europe; Reformation and its impact- Martin Luther, Zwingli and Calvin; Counter Reformation; Thirty Years' War; The French Revolution; Napoleon; and the Congress of Vienna.
5.7	History of India (1757-1857)	The objective of the course is to acquaint the students with the Background of the advent of the Europeans in India; Establishment and consolidation of the British as a political power; Administrative Policies and Reforms; British expansionist policies; and the Revolt of 1857.
5.8	History of Europe (1815-1945)	The objective of the course is to acquaint the students with Concert of Europe, Revolution of 1830, Revolution of 1848; Unification of Germany and Unification of Italy; Formation of Triple Alliance and Triple Entente, Russian Revolution of 1917; Causes of the First World War, League of Nations- Achievements and failure; Rise of Fascism and Nazism; and Circumstances leading to the Second World War.
6.9	History of India (1857-1947)	The objective of the course is to acquaint the students with the British administrative changes after the Revolt of 1857; Administrative reforms; Socio-Religious Reforms; National Awakening; and National Movement under Gandhi and Partition of India.
6.1	History of Assam (1826-1947 AD)	The objective of the course is to acquaint the students with the Advent of the East India Company in Assam and administrative changes made by them; Resistance to British Rule; British territorial expansion; New awakening- Education, Press, Political Associations; and Highlights of the National Movement in Assam.



Programme Specific Outcomes and Course Outcomes

DEPARTMENT OF MANAGEMENT

Programme Outcome	This programme could provide well trained professionals for the Industries, Banking, Insurance Companies, Financing, Transport Agencies, Warehousing etc. To meet the well trained manpower requirements, The Graduates will get hands on experience in various aspects acquiring skills for marketing Manager, selling manager overall administration abilities of the company.
Programme Specific Outcome	The students should possess the knowledge, skills and attitudes during the end of the B.Com degree course. By virtue ,of the training they become an Manager, Accountant, Management Accountant, Cost Accountant, Bank Manager, Auditor, Company Secretary, Teacher, Professor, Stock Agents, Government Jobs etc

Semester-1

101. Fundamentals of Insurance (General Paper)

Course Outcome

- To make the students explore with the fundamental principles of insurance.
- To increase the span of knowledge regarding various types of insured policies and their benefits.

103. Business Organisation and Entrepreneurship Development (Core Paper)

Course Outcome

- To equip the students a craving for individual freedom initiative and enterprise by pursuing self employment and small business entrepreneurship as a viable alternative to salaried employment.



105. Human Resource Management (Major)

Course Outcome

- To provide basic knowledge about the concepts of HRM.
- The course will explain the importance of HR's and their effective management in organisations.
- Demonstrate a basic understanding of different tools used in forecasting and planning HR needs.

Semester-2

203. Principles of Management (Core Paper)

Course Outcome

- To familiarise the students with concepts and principles of management.
- To provide the students with an overall idea of different management techniques.

205. Human Resource Planning Development (Major)

Course Outcome

- To familiarise the students about the procedures and practices applied for the manpower training and placement.
- To make the students aware of various managerial skills.

Semester-3

306. Industrial Relations and Labour Laws (Major)

Course Outcome

- To familiarize with the role of management and unions in the promotions of industrial relations.
- Examine the labour relation issues and its management.
- To acquire skills in handling employer-employee relations.

Semester-4

405. Cost and Management Accounting (Major)

Course Outcome

- To provide adequate knowledge on cost accounting practices.



- To develop the understanding of accounting tools and information and their uses in decision making.

Semester-5

502. Marketing Management (Core Paper)

Course Outcome

- To help the students to understand the concept of marketing and its application.
- To make the students aware of modern methods and techniques of marketing.

503. Financial Management (Core Paper)

Course Outcome

- To build a thorough understanding of the central ideas and theories of modern finance.
- To provide students basic knowledge in cost of capital, working capital management and dividend policy and decisions.

505. Customer Relations and Retail Trade Management (Major)

Course Outcome

- To create insight and new learning in the area of customer relationship management.
- To receive a proper and better understanding of customer management of in a local and global context.

Semester-6

602. Marketing of Service (Core Paper)

Course Outcome

- To equip the students with the knowhow of service industry and creating an environment of recognising service in modern era of management and bifurcate goods along with service.

603. Project Report (Major)

- Every students shall be required to complete a Research project on a topic with respect to the field of specialisation. Students shall select the topic of the research in consultation with the faculty supervisor.



Department of Mathematics

Programme Outcome: The completion of the B.Sc. (Mathematics, Major) programme, the student will be able to:

- i) Communicate mathematics effectively by oral, written, computational and graphic means.
 - ii) Create mathematical ideas from basic axioms.
 - iii) Utilize mathematics to solve theoretical and applied problems.
 - iv) Identify applications of mathematics in other disciplines and in real world.
 - v) Appreciate the requirement of lifelong learning through continued education.
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Course Outcome

COURSE	OUTCOME
1. Coordinate Geometry	To inculcate knowledge on solving problems in analytic geometry and able to find appropriate solutions for given problems.
2. Differential equation	To inculcate knowledge on solving first and second order algebraic equations, partial differential equations, Lagrange's equation.
3. Abstract Algebra and Matrices	It gives a brief summary of the results from Set theory, Groups, Rings, Vector spaces and Fields. It introduces some new ideas of matrices, solution of linear equation by matrix method.
4. Real Analysis	To gain the knowledge on real numbers and their properties and proofs.
5. Mechanics	To gain the knowledge on fixed particles and on moving particles, properties and proofs.
6. Vector Analysis	To know scalar triple product, vector triple product, Differentiation and Integration of vectors.
7. Hydrostatics	Students learn to calculate hydrostatics pressure and force on plane and curved surface, formulate the problems of buoyancy and solve them, to describe the motion of fluids.
8. Numerical Analysis	Students learn various topics in numerical analysis such as solution of nonlinear equations in one variable, interpolation and approximation, numerical differentiation and integration, direct methods for solving linear system, numerical solution of ordinary differential equation.
9. Computer Programming in C	On successful completion of this subject the students have the programming ability in C language
10. Discrete Mathematics	To learn the notation of mathematical thinking, mathematical proofs, algorithmic thinking and able to apply them on problem solving.
11. Graph and Combinatorics	Students are able to gain basics concepts of combinatorial graph theory, learn the concept of graph, tree, Euler graph, cutset and combinatorics and the applications of graphs in science, business and industry.
12. Complex Analysis	To inculcate the knowledge on complex numbers and their properties and proofs.
13. Calculus	To inculcate knowledge on the ability to find the effects of changing conditions on a system.
14. Algebra and trigonometry	To inculcate knowledge on inequalities, sequence and series, complex numbers, trigonometric functions, cubic equation solutions of cubic equations.



15. Linear Algebra	On successful completion of this subject, student should able to define basic terms and concepts of matrices, vectors and complex numbers to solve numerical problems.
16. Topology	On successful completion of this course students will understand terms, definition and theorems related to topology; demonstrate knowledge and understanding of metric spaces; apply theoretical concepts in topology to understand real world application.
17. Rigid Dynamics	On successful completion of this course students will understand fundamentals of mechanics of rigid bodies.
18. Probability	Students will be able to learn the importance of probability and computing, develop skills in presenting quantitative data using appropriate diagrams, tabulations and summaries, interpret and clearly present output from statistical analysis in a clear concise and understandable manner.
19. Optimization Theory	Upon completion of the course, students will have to: Describe clearly a program, identify its parts and analyses the individual function; understand optimization techniques using algorithms. Investigate, study, develop, organize and promote innovative solutions for various applications.



MTM (Master of Tourism Management)

INTRODUCTION

(About the Course)

Travel and Tourism, in today's context is considered as one of the largest industry and the biggest contributor in the global economic development. It is one of the biggest foreign exchange earners of a country. Besides earning foreign exchange, it is also being recognized as a great source of employment to both skilled, semi-skilled and unskilled labour. Since it is a service industry, it creates employment opportunities for the local population as well. Now-a-days, Tourism has become very instrumental and beneficial for developing countries, where the level of unemployment and underemployment trends seem to be very high. It also helps in achieving an equitable balance between major industrial areas and the rest of the country. Besides economic benefits to a country by way of earning foreign exchange and employment generation tourism also makes a tremendous contribution to the improvement of social, political and their cultural understanding. Travel between different countries helps to minimize the political, social and cultural misconceptions. International contracts have always been the perfect way of spreading ideas about other cultures, bringing of inter-personal and inter cultural cohesion and fraternity. Tourism makes possible to know different political views of different people and helps in bringing people closer to each other, thereby improving the understanding and goodwill between different nations of the world.

“TOURISM” : ITS RELATION TO OTHER SUBJECTS :

The subject of tourism is related to many other subjects, Its relationship is closer to Anthropology, History, Geography, Economics and Management studies and other subject areas. Hence in terms of dissemination of knowledge and creation of knowledge tourism may prove to be instrumental, besides generating employment avenues in different levels. It will also help in the growth of many ancillary trades and services practices, In today's context no educational programme will be successful without having a direct bearing on employment Market, Since we are fast heading towards a knowledge based society, as envisaged by the national planning commission, and since we are bound to diversify our academic programmes in the context of social realities, we think, tourism in the P.G. level is sure to usher in a change in our institution.



“TOURISM” AS A JOB ORIENTED COURSE:

i) **EMPLOYMENT OPPORTUNITIES :**

The Tourism industry comprised of mainly four distinctive sectors.

1. Transportation
2. Accommodation
3. Travel Agency & Tour Operator
4. Govt. Sector.

1. **Transportation** : In the transportation sectors mainly in the different airlines of the world, a Tourism Graduate or post Graduate can engage themselves/herself in the ticketing department (both domestic and international) in their Main Office or in the Branch Office which are scattered in different parts of India as well as across the Globe.

In the Indian Railways there are lot of job opportunities for the Tourism Graduate or post Graduate since the department is recently giving more priority for the promotion of Tourism by introducing different Tourist Trains.

2. **Accommodation** : In the accommodation sector that is in the hotels and other establishments, such as, Mountain Resorts, Beach Resorts etc. where a Travel Department exists in which a Tourism Graduate and post Graduate can engage himself as Tour Manager and Tour

In charge.



3. **Travel Agency and Tour Operators** : In this sector there are lot of employment opportunities for the Tourism Graduate, and post Graduate and Professionals.

A Travel Agency usually have different departments like Marketing and Sales, Finance and Accounting, International Counter, Domestic Travel, Documentation, Planning and Costing etc. where Tourism Graduate, post Graduate and Professionals can be a major workforce for the Travel Agency.

Since many Travel Agencies and Tour Operators require “ Tourist Guide”, who can give all the detail information about a place or destination, where a Tourism Graduate, post Graduate can become very effective.

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4. **Govt. Sector** : In govt. sector a Graduate or post Graduate and tourism professional can work as tourist information officer and tourist officer in state/central tourism department and development corporation in the state, outside the state and abroad.

ii) **Self-Employment** :

In case of self-employment, there are lots of scope for a Tourism Graduate and post Graduate. They can engage themselves in establishing their own Travel Agency or can work as a local Tour Operator. They can also establish some Hotel or Resort in the important Tourist destination, since during their course curriculum, they will be provided with all the information and requirements for the establishment of Travel Agency and their working activities and also for setting up of a Hotel or Resort and the Marketing parts of it.

Government Assistance for Tourism Post Graduate in case of Self-Employment :

The Department of Tourism (Govt. of India/Assam) gives a various kinds of assistance in the form of information and finance to the Tourism Post Graduate and Tourism Professionals if they want to be self-sufficient in the field of Tourism in matters of establishment of Travel Agency, Hotels etc.



1st SEMESTER

➤ Paper 101: (Fundamentals of Tourism)

Course outcomes: To acquaint the students with the basic terms and terminologies and the fundamentals of tourism.

➤ Paper 102: Tourism Policy, Planning and Development

Course outcomes: The course will give a thorough idea of the steps in planning process involved in tourism and the various forms of tourism along with the plans and policies of the government.

➤ Paper 103: Physical and Cultural Resources of Tourism of North-East India

Course outcomes : To provide an insight into the various natural, cultural and man-made tourism resources of Assam and North east India.

➤ Paper 104: Natural and Wildlife Tourist Resources of India

Course outcomes : To provide an insight into the various natural and wildlife tourism resources of India along with thorough study of the beaches, deserts, islands and adventure related tourism related activities.

➤ Paper105: Environmental and Ecological Basis of Tourism

Course Outcomes: The students will understand the environment and their relationship with tourism. It also helps the students to get knowledge on the ecological balance and carrying capacity of tourist destination.

➤ Paper 106: Transport and Tourism

Course Outcomes: To provide basic knowledge about the transport network i.e. Railways, Waterways, Airways and Roadways in the development of tourism industry.

➤ Paper 107: Computer Application in Tourism and Project Work

Course Outcomes: It imparts knowledge on the basics of computer and finally its application in tourism. Besides the project work gives the students a thorough knowledge on the use of computer in preparing tourist itinerary.



➤ **Paper 108: Study of Map and Its Application in Tourism**

Course Outcomes: The students will get a basic understanding of latitudes and longitudes and its implementation in the practical field. Further the study of GIS and GPS and spatial analysis will be an added advantage for the preparation of Map designing.

2nd SEMESTER

➤ **Paper 201: Tourism Management**

Course Outcomes: It will give a basic understanding of the fundamentals of management and its functions in tourism. In addition it also provides knowledge on the intergovernmental, national and international tourism organizations.

➤ **Paper 202: Functional Language (English/Russian)**

Course Outcomes: The course enables the students to learn English in the context of phonetics which allows them to speak the language in a fluent way. Further the inclusion of Russian also prepares them to communicate and escort the Russian tourist.

➤ **Paper 203: Travel Agency, Tour Operation and Ticketing**

Course Outcomes: It gives a further insight into the travel related organizations, their significance and their functions. Along with it also enables the students to learn about the various travel formalities and tour package designing.

➤ **Paper 204: Tourism Marketing**

Course Outcomes: It provides the concept and the application of marketing in the tourism industry.

➤ **Paper 205: Tourism Entrepreneurship**

Course Outcomes: It gives the idea to develop new venture of their own. It also helps to promote new ideas for motivating entrepreneurs.

➤ **Paper 206: Survey and Mapping of National Parks, Sanctuary, Project**

Course Outcomes: It will help to work on the mapping of different National Parks and Wild Life Sanctuaries.

➤ **Paper 207: Survey and Mapping of tourist Spots of North-East India Computer Reservation System**



Course Outcomes: : It will help to work on the mapping of different tourist spots of North East India to understand the place in a better way and also to learn CRS.

➤ **Paper 208: Dissertation/ Field Study and On Job Training**

Course Outcomes: The students will prepare a report on field trip to understand the area in a better way and will also do an on job training in both government and private sector and prepare a report to gather knowledge of their activities.

3rd SEMESTER

➤ **Paper 301: Tourism : A Spatial Perspective**

Course Outcomes: It will give an overview of the world environment and political structure with population density and distribution. Further it also studies about the different countries and their tourist destinations.

➤ **Paper 302: Tourism and Information Technology**

Course Outcomes: To provide information on IT and its relation in tourism, global distribution systems, internet, GIS, GPS etc. further it will also study about IT in Hotel, Airline, Travel Agency etc.

➤ **Paper 303: Riverine Recreation and Tourism**

Course Outcomes: The paper is a major source of information of The main river streams of Assam along with its tourism perspectives and also the role of Government and Private sector's role in this regard. It will also help in further to study about the water based tourism resources like angling, rafting, boating, surfing etc.

➤ **Paper 304: Tourism Law and Ethics**

Course Outcomes: To understand the law related to the preservation of the different tourist spots as well as tourism resources of India.

➤ **Paper 305: Tourism and Hospitality Management**

Course Outcomes: It will give a detailed study about the hotel industry along with its emergence and need in tourism sector.

➤ **Paper 306: Foreign Exchange, Meeting and Event Management**



Course Outcomes: Foreign Exchange being an integral part of tourism, this paper studies about its implementation in this field. Further it also studies about the meeting and event organized in this sector.

➤ **Paper 307: Understanding the Tourism Affair for Selected Countries**

Course Outcomes: As international tourism plays an important role, this paper will give a knowledge about different tourist spots of various countries which are playing an important role in this sector.

➤ **Paper 308: Dissertation/ Field Study Report**

Course Outcomes: It will help students to know a place in a better way by visiting the place. It also makes them understand to find out the problems associated with the place so that further they can put some suggestions to the authorities and the local bodies in this regard.

4th SEMESTER

➤ **Paper 401: Financial and Management Accountancy**

Course Outcomes: It gives a knowledge on the basics of financial management, cost determination and budgeting and its relation with the tourism industry.

➤ **Paper 402: Human Resource Management in Tourism**

Course Outcomes: The course enables the students to understand the concept and nature of Human Resource Management and its role in the tourism industry.

➤ **Paper 403: Functional Language (French/Hindi)**

Course Outcomes: The course enables the students to learn Hindi which makes them to speak the language in a fluent way. Further the inclusion of French also prepares them to communicate and escort the French tourist.

➤ **Paper 404: Cultural and Historical Monument as Tourist Attraction**

Course Outcomes: It gives an elementary knowledge of Indian history, historical tourism resources, archaeological sites and the cultural tourism resources of India.

➤ **Paper 405: Organizational Behaviour in Tourism**



Course Outcomes: The course teaches Organisational behaviour , the various theories of motivation , group behaviour , organisatioal culture and organizational change and its significance in tourism.

➤ **Paper 406: Tourism Organization**

Course Outcomes: It will help students to know about the tourist organization of India, Ministry of Civil Aviation, Travel Organisation and International Tourism Organisation and their functions.

➤ **Paper 407: Survey and Preparation of Analytical Report on Fairs and Festivals**

Course Outcomes: The students will prepare an analytical report on Fairs and Festivals of India with detail survey.

➤ **Paper 408: Dissertation/ Field Study Report**

Course Outcomes: It will help students to prepare a Dissertation /Field Study Report on different topic like It will help students to know a place in a better way by visiting the place. It also make them understand to find out the problems associated with the place so that further they can put some suggestions to the authorities and the local bodies in this regardIt will help students to know a place in a better way by visiting the place. It also make them understand to find out the problems associated with the place so that further they can put some suggestions to the authorities and the local bodies in this regardIt will help students to know a place in a better way by visiting the place. It also make them understand to find out the problems associated with the place so that further they can put some suggestions to the authorities and the local bodies in this regardHistory Monuments, Cultural Events, Festivals and National Parks and Sanctuary as a means of Tourism Development.



DEPARTMENT OF PERFORMING ARTS

PROGRAMME OUTCOME:

Performing Art is a subject where a student can develop their skills with their particular interest and aptitude and this is very essential for success equally. Talent and visibility in the world of Performing Arts is the deciding factor in terms of an artist's future. As Performing Arts includes Music Vocals, Composing and playing instruments, Dance, Drama, Acting skills etc. These depend on the skill which is pursued by the students.

After doing a degree or diploma in this programme the students can get many job profiles. For example performing artist, playback singer, dancer, teacher in the related field, researcher, choreographer, actor etc.

Performing Art offers a conceptual knowledge, a thorough grounding in techniques and grammar of the related skills and specially performance. Students from science, arts or commerce fields, anyone can choose this profession.

COURSE OUTCOME:

SATTRIYA DANCE

Sattriya Dance syllabus has been designed for aims in introducing to the students the basis of Sattriya Dance aesthetics. The course provides a wider view of the tradition of Sattriya Dance with a fresh outlook. It is an understanding of the cultural and rich heritage of the land of Assam. The dance form is a notion of various creative interpretations. In this course a student can get improvement in communication skills and body language, concentration and release of stress through exercise sciences, understanding the importance about body fitness through Yoga, warm up and warm down exercises. This dance form is a glimpse of the 500 years old living heritage of Assam. It is an art work in relation to photographing, video graphing movements and so on.

After finished this course the students may go for various career options like choreography, teaching, performer, they can open their own dance institute etc.

INDIAN CLASSICAL MUSIC (VOCAL)

Music is a study that can be learned not by brain but by the soul. It is one of the challenging fields of the professional education and it is vast field of Performing arts. The music in Indian includes different types of music according to the culture of India. In this course the students are taught about the history of Indian music, the study of music therapy, composing, music interpretations and voice instructions.



Once finished the 12th examination the student may go for the B.A.(Hons.) in Music Vocal, B.F.A (Music), or B.P.A.(Music) degree course of 3 years duration conducted by the various art schools or colleges in India. There are some other diploma courses after 12th passed for the duration of one year.

After all above earning degree is beneficial for the students. Many of the professionals earn the degree after or during the professional career in order to get a suitable platform in their music field. The students need to do continuous practice hard to become successful in this career. If the students have the zeal to become a musician they can go for auditions, can explore themselves on the stage. They can choose their career in composition, music production and engineering, performance, professional music singer, song writing, music business management etc.



PROGRAMME OUTCOME FOR B.A.

DEPARTMENT OF PHILOSOPHY

As a comprehensive study of life and world, philosophy provides the opportunities to morally survive in practical sense. It aims to preserve the values in our society. The outcomes of the programme are presented below:

1. Students will be able to apply their philosophical learning to important public issues.
2. Students will acquire reading skills necessary to understand and would be critically engaged with historical and contemporary philosophical texts.
3. Students will be able to prepare themselves for the competitive examinations like NET, SLET, SSC, BANK, and RAILWAY exams etc.
4. Students can increase their intellectual evaluative skill in all circumstances.
5. Students will be able to explain and differentiate between major approaches to moral philosophy such as deontology and virtue ethics.

Course outcomes of Philosophy

B.A. 1st semester (H)

Paper: 1016

As a logico-philosophical discipline Indian Philosophy can create a sense of spiritualism in the minds of students and introduce them to our Indian rich traditional scriptures like Vedas, Upanishads and Bhagavadgita.



Paper: 1026

As a science of inference and reasoning logic tries to give some basic ideas about propositions, syllogistic arguments, Venn diagram, set notation etc. that help in current competitive examinations.

B.A. 3rd semester (Major)

Paper-I (3.1)

This paper aims to introduce the students about Indian philosophy, its different philosophical systems and their various theories like materialism, syadvada, four noble truths etc.

Paper-II (3.2)

This paper aims to introduce the students about various modern western philosophers like Descartes, Spinoza, Leibnitz and their different theories .e.g. cogito-ergo-sum, substance, theory of monads etc.

B.A. 5th semester (Major)

Paper 5.1

Through this paper students can be familiar with the Greek Philosophers of pre-Socratic era. They can go through various theories regarding the primary stuff of the universe.

Paper- II (5.2)

Through this paper students can acquire knowledge about contemporary concepts of Indian philosophy provided by Radhakrishnan, Aurovindo, tagore, Vivekananda etc.

Paper-III (5.3)

This paper aims at giving the knowledge of analytic philosophy (Linguistic philosophy) and different analytical philosophies theories like Russell's logical atomism, Moore's Refutation of Idealism, Wittgenstein's Picture Theory, Ryle's Refutation of Cartesianism.



Paper-IV (5.4)

Through this paper students become familiar with morality and moral philosophy, fact & Value, Normative ethics, Meta ethics and Hedonism etc.

Paper-V (5.5)

This paper intends to introduce the students about the nature and scope of philosophy of religion, Aminism, Totemism, theories of Origin of Religion.

Paper-VI (5.6)

Through this paper students can aware of the concepts of social philosophy, its nature, theories of origin of society, Terrorism, Globalization, Feminism, Marxism etc.



DEPARTMENT OF PHYSICS

Program Outcome

At the completion of B. Sc. in Physics students are able to:

Demonstrate a rigorous understanding of the core theories & principles of physics, which includes mechanics, electromagnetism, thermodynamics, & quantum mechanics. Learn the Concepts as Quantum Mechanics, Relativity, introduced at degree level in order to understand nature at atomic levels. Provide knowledge about material properties and its application for developing technology to ease the problems related to the society. Understand the set of physical laws, describing the motion of bodies, under the influence of system of forces.

Understand the relationship between particles & atom, as well as their creation & decay. Relate the structure of atoms & subatomic particles Understand physical properties of molecule the chemical bonds between atom as well as molecular dynamics. Analyse the applications of mathematics to the problems in physics & develop suitable mathematical method for such application & for formulation of physical theories. Learn the structure of solid materials & their different physical properties along with metallurgy, cryogenics, electronics, & material science. Understand the fundamental theory of nature at small scale & levels of atom & sub-atomic particles.

Course Outcome

First Semester

Paper 101: Mathematical methods and Mechanics

After completion of this course student will understand about the vector and scalar fields and their mathematical operation. Also the application of these fields in practical time. Student will able to relate the inertial and non- inertial frame and their different laws and principal in these frame.

Paper 102: Wave, oscillations and Ray optics

After completion of this course student should be able to –

1. Demonstrate the behaviour and nature of a wave and its application.
2. Explain why SHM is important in physical world.
3. Describe the formation of real and virtual images in lens as well as mirror.

Second semester



Paper 201: Mathematical methods- II and Properties of matter.

After completion of this course, student will able to explain about the physical application of Green's function and curvilinear surface. The conversion of Cartesian to other co-ordinate system also get acquainted. Student will also able to relate the elasticity, surface tension and viscosity in real time after completion of course.

Paper 202: Heat and thermodynamics.

After completion of this course student will able to –

1. Describe basic concepts of Thermodynamic.
2. Judge the properties of pure substance.
3. Application of law of thermodynamics for any real systems.
4. Can relate with the energy efficiency.

Third Semester

Paper 301: Mathematical Methods-III and Electrostatics

After completion of this course student will able to –

1. The students will be able to understand and apply matrix mathematical skills to solve quantitative problems in the study of physics.
2. Will enable students to apply integral transform to solve mathematical problems of interest in physics.
3. To explain and solve advanced problems based on classical electrodynamics using Maxwell's equation.
4. The students will be able to analyse radiation systems in which the electric dipole, magnetic dipole or electric quadruple dominate.

Paper 302: Current electricity and Magneto statics

After completion of this course student will able to –

1. Obtain, through a combined theoretical and experimental approach to the subject, a fundamental understanding of electromagnetic phenomena.
2. Learn how to analyse various problems in electromagnetism with mathematical methods involving vectors and elementary differential and integral calculus.
3. Gain experience in analysing problems within electromagnetism with ICT based methods.
4. Learn experimental methods in physics.

Fourth Semester



Paper 401: Mathematical methods- IV and computer programming.

After completion of this course student will able to –

1. Identify situations where computational methods and computers would be useful.
2. Given a computational problem, identify and abstract the programming task involved.
3. Approach the programming tasks using techniques learned and write pseudo-code.
4. Choose the right data representation formats based on the requirements of the problem.
5. Use the comparisons and limitations of the various programming constructs and choose the right one for the task in hand.
6. Write the program on a computer, edit, compile, debug, correct, recompile and run it.
7. Identify tasks in which the numerical techniques learned are applicable and apply them to write programs, and hence use computers effectively to solve the task.

Paper 402: Wave optics and special theory of relativity

After completion of this course student will able to –

1. Appreciate the efficacy of Fourier transforms and their application to physical systems.
2. Understand linear, time-invariant systems.
3. Understand the role of the wave equation and appreciate the universal nature of wave motion in a range of physical systems
4. Understand dispersion in waves and model dispersion using Fourier theory.
5. Derive Lorentz transformation equations by using special Theory of Relativity.
6. Define Four Dimensional Space and deduce the transformation formulae between E and B, J and ρ .
7. Explain Gibb's paradox.

Fifth Semester

Paper 501: Mathematical Methods- V and Classical Mechanics

After completion of this course student will able to –

1. To demonstrate knowledge and understanding of the following fundamental concepts in: the dynamics of system of particles, motion of rigid body,
2. Lagrangian and Hamiltonian formulation of mechanics
3. To represent the equations of motion for complicated mechanical systems using the Lagrangian and Hamiltonian formulation of classical mechanics.

Paper 502: Atomic Physics

After completion of this course student will able to –



1. Explain the characteristics of Photoelectric and Compton effects.
2. Give the origin of Hydrogen spectra from Bohr's theory.
3. Obtain the energy values of systems executing Linear Harmonic Oscillator
4. Explain the characteristics of X Ray Spectra and derive Mosley's law.

Paper 503: Quantum Mechanics

After completion of this course student will able to –

1. Able to formulate and solve problems in quantum mechanics using Dirac representation.
2. Able to grasp the concepts of spin and angular momentum, as well as their quantization and addition rules.
3. Familiar with various approximation methods applied to atomic, nuclear and solid-state physics.

Paper 504: Electronics

After completion of this course student will able to –

1. Explain the I-V characteristics of Zener diode, Tunnel diode and PN diode.
2. Construct Rectifiers and Filters using diodes.
3. Find gain of BJT Amplifiers & frequency of operation of Oscillators.
4. Explain communication techniques using Modulation & de modulation.
5. Calculate gain of Operational Amplifiers and describe its use.
6. Introduce basic gates and construct Flip- Flops.

Sixth Semester

Paper 601: Nuclear Physics

After completion of this course student will able to –

1. Express the basic concepts of nuclear physics.
2. Express the alpha decay. Can express reaction equation and Q values and Energy of alpha particles.
3. Express the types of gamma decay. Can tell about selection rules.
4. Explain nuclear fusion. Can state basic fusion processes. Can write characteristics of fusion, cycles in solar fusion
5. Express the basic principles and laws on criterion.

Paper 602: Mathematical Methods and Solid State Physics

After completion of this course student will able to –



1. The students should be able to formulate and express a physical law in terms of tensors, and simplify it by use of coordinate transforms.
2. Be able to account for interatomic forces and bonds
3. Be able to account for how crystalline materials are studied using diffraction, including concepts like form factor, structure factor, and scattering amplitude.
4. Know the principles of structure determination by diffraction.

Paper 603: Modern optics and Electromagnetic theory

After completion of this course student will able to –

1. Describe the optical principles of thick lenses and optical aberrations.
2. Use the principles of wave motion and superposition to explain the physics of polarisation, interference and diffraction.
3. Describe the operation of optical devices, including, polarisers, retarders, modulators and interferometers.
4. Define and recognize different co- ordinate systems to describe the spatial variations of the physical quantities dealt in electromagnetic field theory as they are functions of space and time.
5. Apply different techniques of vector calculus to understand different concepts of electromagnetic field theory.
6. Explain fundamental laws governing electromagnetic fields and evaluate the physical quantities of electromagnetic fields (Field intensity, Flux density etc.)

Paper 604: Statistical Mechanics and Computer Application

After completion of this course student will able to –

1. Acquired a foundation for advanced courses in physics, especially those involving many-particle systems.
2. Be able to analyse and debate society problems of energy, environment and climate based on fundamental principles of thermodynamics and statistical physics.
3. Be able to solve integration, differentiation using computer programming.



Date: 28/06/2019

Programme Outcome and Course Outcome

Department of Political Science
Pragjyotish College,
Guwahati.



B.A POLITICAL SCIENCE

PROGRAMME OUTCOMES AND COURSE OUTCOMES

PROGRAMME OUTCOMES

- ***Objectives***
 - To familiarise the students with the basic ideas of political science.
 - To make them thorough in the concepts of political theory.
 - To help them understand and distinguish between basic concepts like political theory, political thought and political philosophy.
 - To help the students understand and relate the concepts and facts with the political realities of the country and different parts of the world.
 - To equip them with the basics of the discipline and help them learn the basic underpinnings of the subject of Political Science.

- ***Outcomes***
 - Understanding of government institutions, electoral processes, and policies in a variety of countries around the world and the ability to compare the effectiveness or impact of various political arrangements across countries.
 - Knowledge of some of the philosophical underpinnings of modern politics and government and the legal principles by which political disputes are often settled.
 - Understand the changes in patterns of political behaviour, ideas and structures.
 - Assess how global, national and regional developments affect polity and society.
 - Develop the ability to make logical inferences about social and political issues on the basis of comparative and historical knowledge.
 - Knowledge of key theories and concepts, historical developments, organizations, and modern issues in international relations



COURSE OUTCOME

Semester I

- ***Paper-I: Political Theory-I***

- To understand the nature, scope and significance of political theory.
- To appreciate the procedure of different theoretical ideas in political theory.
- To understand the various traditional and modern theories of political science.
- To evaluate the theories of origin of the state.

- ***Paper-II: Politics in India-I***

- To understand the philosophy of Indian constitutions.
- Introducing the Indian Constitution with a focus on the evolution of it and examining the essence of the Preamble.
- To know the salient features of Indian constitution
- Examining the Fundamental Rights and Duties of Indian citizens with a study of the significance and status of Directive Principles.
- Critically analyzing the important institutions of the Indian Union: the Executive: President; Prime Minister, Council of Ministers; Governor, Chief Minister and Council of Ministers; The legislature: Rajya Sabha, Lok Sabha, Speaker, Committee System, State Legislature, The Judiciary: Supreme Court and the High Court: composition and functions- Judicial Activism.

Semester II

- ***Paper-I: Political Theory-II***

- Explaining the concept of Democracy, its types and theories (Elitist, Pluralist and Marxist) relating to it.
- To understand the concept of Development and various views and Perspective relating to it. i.e. Liberal, Marxist, Sustainable Development, Human Development and Gandhian Model of Development.
- Understanding basic concepts of Justice, distributive justice, multiculturalism and social justice.
- Explaining the nature of Third World Countries and Neo-Colonialism.
- Explaining the views of Andre Gunder Frank in terms of Dependency Theory.

- ***Paper-II: Politics in India-II***

- Looking at the Centre-State Relations with focus on the Legislative, Administrative and Financial Relations.
- Critically evaluating the Indian Party system – its development and looking at the ideology of dominant national parties.
- Evaluating the Electoral Process in India with focus on the Election Commission: Composition, Functions and Role.



- Investigating the challenges to National Integration: Terrorism, Regionalism and Casteism.

Semester-III

- ***Paper-I: International Relations-I***

- The students will get an overview about the nature, evolution and scope of international relations.
- It will help them to get acquainted with the basic ideas of international relations
- It will familiarise the students with the different approaches to the study of International Relations.
- It will also give them a historical background of the discipline which will help them understand international politics in a better way.

- ***Paper-II: Public Administration-I***

- The paper will introduce the students to the basic concepts of Public Administration along with its founding principles and history.
- The paper shall also deal with the primary administrative theories and the basic principles of organisation which will help the students to develop a comprehensive understanding of the subjects.
- The students will also learn about structure of organisation and their intricacies.

Semester-IV

- ***Paper-I: International Relations-II***

- To understand the basic concepts of International Relations and also develop a preliminary understanding of the global economy.
- Explaining the formation, charter and objectives of United Nations and its working on Millennium Development Goals.
- Evaluating the working of United Nations in resolving conflict and peacekeeping operations.
- To analyse the international security; Disarmament, Arms Control and Nuclear non-proliferation.
- This paper shall help the students to develop a deeper understanding of International Relations along with the different international organisations and stakeholders in it.

- ***Paper-II: Public Administration-II***

- To understand the basics of personnel administration- both processes and institutions.
- To explain the concepts of financial administration in the country with special reference to the process and principles of budgeting.
- To introduce the concept of development administration and to the contributions of Fred W. Riggs.
- To explain the importance of citizens and administration and introduce institutions for the redressal of public grievances- Lokpal, Lokayukta etc.



Semester-V

• ***Paper-I: Western Political Thinkers***

- To introduce the students to the Greek political tradition, specifically to the ideas of Plato and Aristotle.
- To explain the ideas of medieval and early modern political thinkers like St. Augustine and Machiavelli.
- To familiarise the students with the exponents of the Social Contract Theory- Hobbes, Locke and Rousseau.
- To help the students to develop and elaborate understanding of Marxian political thought.

• ***Paper-II: Select Constitutions-I***

- To introduce the students to the basics of the ideas of constitution and constitutionalism.
- To introduce the constitution of United Kingdom- British political system and the British political traditions.
- To introduce the constitution of United State of America, it's Federal system, presidential form of government and political parties and interest groups.
- To help the students make a comparative study of the constitutions of United Kingdom and United States of America.

• ***Paper –III: General Sociology-I***

- This paper shall help the students to understand and defined the concepts of sociology and shall also brief them about the historical evolution of the same.
- It shall explain the different methods of sociological study to the students.
- It shall elaborate in depth about the basic concepts of sociology- like- Family, Society and Community.
- It shall introduce the students to the ideas of socio stratification, socio class and concepts of gender.

• ***Paper-IV: Contemporary Political Issues***

- To explain the current issues of international politics to the students- like environmental issues and terrorism.
- To introduce and explain the ideas of human development and human security as well as to elaborate on the issues of gender in international politics.

• ***Paper –V: Political Sociology-I***



- To explain the historical of the discipline of Political Sociology and to familiarise the students with the definition, nature, subject-matter and utility of the same.
- To elaborate on the primary concepts of- political culture, socialisation and political mobility.

- ***Paper-VI: Human Rights***

- To introduce the students the concept, evolution and classification of Human Rights.
- To acquaint the students with the different approaches and perspective of human rights.
- To elaborate on role of United Nations in the context of Human Rights as well as to study the role of International NGOs in relation to Human Rights.

Semester-VI

- ***Paper-I: Indian Political Thinkers***

- The paper shall introduce the most prominent Indian Political Thinkers like Manu, Kautilya, Raja Ram Mohan Roy and Jyotiba Phule.
- It shall also explain the ideas of M N Roy, Mahatma Gandhi, Jawaharlal Nehru, B R Ambedkar and J P Narayan.
- The basic objective of the paper is to help the students to develop a comprehensive understanding of the basics of Indian political thought.

- ***Paper-II: Select Constitutions-II***

- To introduce the students to the constitution of the People's Republic of China- their political processes, party system and institutions.
- To explain the constitution of Switzerland- the Swiss political tradition, Swiss federalism, their pattern of democracy and their political parties and interest groups.

- ***Paper-III: General Sociology-II***

- To familiarise the students with the ideas of- culture, social control, social change and socialisation.
- To elaborate the principles in operations of the given concepts in an elaborate manner.

- ***Paper-IV: Contemporary Political Ideologies***

- To introduce the students to the most contemporary ideologies like- neo liberalism, feminism, religious fundamentalism and multiculturalism.
- To explain the meaning and the different understandings of given concepts and to help the students to develop a broad understanding of these ideologies.

- ***Paper-V: Political Sociology-II***



- This paper shall explain the Elite Theories of political power along with the concept of political; change.
- It shall also elaborate on the concepts, nature, and meaning of the idea of political development and shall also explain the concept of bureaucracy and its relation to society and politics.

- ***Paper-VI: Human Rights in India***

- This paper shall focus on the tradition of human rights in India.
- It shall elaborate on the historical evolution, and institutional mechanisms for the protection of human rights in India.
- It shall also touch upon the emerging issues of human rights in the country, different movements relating to human rights and shall also deal with the rights of vulnerable groups in India.

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DEPARTMENT OF STATISTICS

PROGRAM OUTCOMES AND COURSE OUTCOMES

Program outcomes of B. Sc (statistics)

The program enables the students:

1. To develop basic facts and concepts in statistical and mathematical data and its handling.
2. To analyze and interpret the data numerically through various statistical techniques.
3. To develop skills in computer handling and developing small computer programs.
4. To develop skills in handling statistical software packages and applies in the field of enquiry.
5. To provide wide career opportunities in research and project work, data analysis/ consultant and services like Indian Statistical Services.
6. To provide its application to all branches of science.

Course outcomes for all Courses

Course Outcomes	
Course	Outcomes
Paper M 101: Descriptive Statistics	To acquire knowledge about different types of Data, Collection of Data and presentation of Data through Graphical representation. To have an idea about the nature of frequency distribution and their representation through histograms and frequency curves. Also, to interpret the data from various measures of central tendency and dispersion. Further, the students will get know about the correlation between two variables.
Paper M 102: Probability	To know the basic concepts of probability. Use the basic probability rules, including additive and multiplicative laws. To know about the marginal and conditional probability mass function or probability density function and also generating functions.
Paper M 103: Practical	Analyzing statistical data, both univariate and bivariate, through the different means of measures of central tendency, dispersion, correlation and regression method. Also, to know how to solve the problems of probability.



Paper M 201: Numerical and Computational Statistics	On successful completion of this course, students will be able to understand different methods of interpolation techniques, numerical integration and how to solve linear difference equations.
Paper M 202: Mathematical Methods-I	To understand the basics of real analysis and acquire the idea of limit continuity and differentiability of functions of one variable. Also, students will be able to understand the infinite and improper integrals and their properties.
Paper M 203: Practical	To acquire the knowledge of basic problem solving method related to numerical techniques.
Paper M 301: Mathematical Methods-II	To acquire computational techniques and algebraic skills essential for the study of system of linear equations, matrix algebra including rank, inverse and also quadratic equations.
Paper M302: Distribution-I	After completion of this course students will able to know about the discrete and continuous probability distributions such as Binomial, Poisson and Normal including its requirements and applications.
Paper M 303: Practical	To acquire the knowledge of basic problem solving method related to matrix algebra and probability distribution.
Paper M401:Mathematical Methods	To understand the basic algebraic skills needed for the study of vector space, linear independence and dependence of vectors, Eigen values – vectors, lines and hyper planes, convex sets, linear programming problem and also transportation problem.
Paper M402: Descriptive Statistics 2 & Prability-2	The students will have the basic knowledge about the large sampling tests, central limit theorems and also about the stochastic processes in time domain including Markov chains.
Practical M403	To acquire the knowledge of basic problem solving method related to transportation problem, LPP, Markov chains, and Eigen values-vectors.
Paper M501:Sampling Distribution and Statistical Inference-I	On completion of this course, students are introduced with the knowledge of sampling distribution including their properties and applications and also to order statistics. They are further introduced with the concept of point estimation and different methods of estimation of a paramete



Paper M502:Sample Survey	Upon completion of this course, students will be able to apply different sampling techniques such as simple random sampling, stratified sampling and systematic sampling etc that would be useful for research and management in many fields.
Paper M503:Applied Statistics	Students will be able to acquire knowledge on index numbers and calculate an indices from given data and time series and its components. Also, they will understand the basics of income distribution, demand and econometrics.
Paper M504:Operations Research	This course aims to enlighten the students with replacement theory, inventory models and Network analysis including network diagrams and using PERT and CPM.
Paper M505: Practical	Students will be able to implement practical cases of sampling theory and method of estimation of unknown parameter.
Paper M506: Practical	Students will be able to apply the techniques of calculation of index numbers, to measure the components of time series, to measure the income inequality through Lorenz curve and Gini's coefficient in practical situation.
Paper M601:Statistical Inference	To familiarize the students with the concept of interval estimation, hypothesis testing and various non parametric tests.
Paper M602:Design of Experiments	Students will be able to appropriately interpret the results of analysis of variance tests, design experiments, carry them out and analyze the data they yield. They will also able to use the factorial experiment for agricultural data.
Paper M603:Applied Statistics	The students acquire the basic knowledge about the vital statistics and official statistics of India including NSSO, CSO. They will also understand the concept of quality control, control charts for variable and attributes, and acceptance sampling plans.
Paper M604:Computer Programming and Multivariate Analysis	To enable the students to understand the computer programming in Fortran 77 and to use flowcharts. Further, to understand the bivariate and multivariate normal distribution including its derivation and properties.



<p>Paper M605: Practical</p>	<p>Students will be able to implement design of experiments, testing of hypothesis, non parametric, demography in practical situation.</p>
<p>Paper M606:Project</p>	<p>This course will enable students to go for a field survey and acquire practical knowledge on the implementation of various statistical techniques on the data collected by them.</p>



DEPARTMENT OF TOURISM MANAGEMENT

GENERAL AND VOCATIONAL COURSE

TOURISM AND TRAVEL MANGEMENT (TTM)

PROGRAMME OBJECTIVES

The objectives of the programme are to ensure that the students gain a wide range of the essential concepts of tourism. They get an overall picture of tourism destination at the local and the national level. Further the inclusion of management and On Job training prepares the students for jobs in the travel and tourism related companies, government as well as other private sectors. In addition the field study prepares the students with a better understanding of the topics included in the syllabus.

Programme Learning Outcomes:

1. To make students gear up to work in the different field of tourism both in the private and the government sector.
2. To train them to become entrepreneurs and to create their own identity.
3. To create awareness in the society about the significance of tourism and its positive effects in the development of a nation.
4. To work ethically to develop the local tourist destinations in a professional way.
5. To understand the culture of the state as well the nation so as to preserve their identity for the economic upliftment.

TTM (Travel and Tourism Management)

➤ Paper : 101 (Conceptual Framework of Tourism)

Course outcomes: To acquaint the students with the basic terms and terminologies and the fundamentals of tourism.

➤ Paper : 201 (Tourism Resources of Assam and North East India)



Course outcomes: To provide an insight into the various natural, cultural and man made tourism resources of Assam and North east India.

➤ **Paper : 301 (Tourism Policy, Planning and Development)**

Course outcomes: The course will give a thorough idea of the steps in planning process involved in tourism and the various forms of tourism along with the plans and policies of the government.

➤ **Paper : 302 (Practical on map work and tourist map designing)**

Course outcomes: The students will get a basic understanding of latitudes and longitudes and its implementation in the practical field. Further the preparation of brochure and the assessment of tourism facilities in the local level will enable them to get distinct picture of the tourism scenario.

➤ **Paper: 401 (Tourism organization : Travel Agency , Tour Operator)**

Course outcomes: Paper: 402 (Practical on Computer Application in Tourism and Itinerary designing)

Course outcomes: It imparts knowledge on the basics of computer and finally its application in tourism. Besides the project work gives the students a thorough knowledge on the use of computer in preparing tourist itinerary.

➤ **Paper : 501 (Tourism Management)**

Course outcomes: It will give a basic understanding of the fundamentals of management and its functions in tourism. In addition it also provides knowledge on the intergovernmental, national and international tourism organizations.

➤ **Paper : 502 (Tourism Resources of India)**

Course Outcomes: The course provides the historical knowledge of India as a tourism resource and also the natural tourism resource of India as a crucial factor in the tourism development of India.

➤ **Paper : 601 (Tourism Marketing)**

Course Outcomes: It provides the concept and the application of marketing in the tourism industry.

➤ **Paper : 602 (Field study and on Job Training)**

Course Outcomes: It provides the students guidance regarding the preparation of field study report and engaging the students in any travel agency so as to equip them with the practical knowledge of the functioning of a travel agency.



Programme specific outcomes of B. Sc. Zoology Programmes

Name of the Programme	Outcome of the programme	Programme specific outcome
<p style="text-align: center;">B. Sc. Zoology Programme (As per Gauhati University)</p>	<p>The BSc. Zoology programme is designed to help the students to:</p> <ol style="list-style-type: none"> 1. To impart basic knowledge of various disciplines of Zoology and General biology meant for a graduate and for higher studies. 2. To inculcate interest in nature and its living creatures and in future they can diversify their interest in the field of photography as a career as NE India being the HUB of Biodiversity. 3. To make them understand the unity of life with the rich diversity of organisms and their ecological and their significances. 4. To acquire basic skills in the observation and study of nature, biological techniques, experimental skills and scientific investigation. 5. To impart awareness for the conservation of the biosphere 	<p>The under-graduate programme should be able to:</p> <ol style="list-style-type: none"> 1. To identify and understand vertebrate as well as invertebrate. 2. To explain physiological and biochemical activities and its impact on human bodies. 3. To understand basic genetics. 4. To develop respect for nature 5. To explain the role and impact of different environmental conservation programmes 6. To identify socio-economic animals & it's beneficial to humans. 7. To identify various potential risk factors to health of humans. 8. To explain the importance of genetics and biotechnology. 9. To obtain knowledge in wildlife and can choose Wildlife Tourism as a career.



Course outcomes of B. Sc. Zoology programmes

Programme	Course Code	Name of the course	Course Specific Outcome
Model 1: B. Sc. Zoology (Honours/Major)	M – 101	Biosystematics and Taxonomy	<ul style="list-style-type: none"> ➤ To give a thorough understanding in the fundamental principles of systematic in which the animals are how to classify according to their characters and what are theories which have to follow for classification is studied. ➤ International rules of nomenclature and classification is studied.
	M - 102	Animal Diversity – II (Non – Chordates)	<ul style="list-style-type: none"> ➤ To make the student observe the diversity in non-chordates and their systematic position. ➤ To make them aware of the economic importance of some classes. ➤ To make the student observe the diversity in non-chordates.
	M – 103	Practical	<ul style="list-style-type: none"> ➤ Dissection of different systems of invertebrates. ➤ Temporary slide preparation and studied through prepared slides. ➤ Study of museum specimens (invertebrate)
	M – 201	Animal diversity – II (Chordates)	<ul style="list-style-type: none"> ➤ To make the student observe the diversity in chordates and their systematic position. ➤ To make them aware of the economic importance of some classes
	M – 202	Ecology, Wildlife Conservation & Management	<ul style="list-style-type: none"> ➤ To create appreciation on diversity of life on earth ➤ To understand different levels of biological diversity ➤ To learn biodiversity estimation techniques ➤ To create interest for conservation of biodiversity and its management
	M - 203	Practical	<ul style="list-style-type: none"> ➤ To create knowledge regarding internal system of chordates ➤ To understand organs through permanent slides ➤ To make the student observe the diversity in chordates.
	M – 301	Comparative Anatomy and Histology	<ul style="list-style-type: none"> ➤ To impart knowledge about histology of tissues. ➤ To impart knowledge about the importance of natural dyes. ➤ Gain knowledge of functional anatomy of organs.



	M – 302	Cell Biology	<ul style="list-style-type: none"> ➤ To emphasize the central role of Cell biology, being the most developing areas of biological science. ➤ To make aware of different cell organelles, their structure and role in living organisms. ➤ To develop critical thinking, skill and research aptitudes.
	M – 303	Practical	<ul style="list-style-type: none"> ➤ To acquire knowledge about the types of cells. ➤ To learn various techniques for histological studies. ➤ To impart basic knowledge on different tissues and their importance
	M – 401	Developmental Biology	<ul style="list-style-type: none"> ➤ The achievement of above objectives along with periodic class discussions of current events in science, will benefit students in their further studies in the biological/physiological sciences and health-related fields, and will contribute to the critical societal goal of a society
	M – 402	Genetics	<ul style="list-style-type: none"> ➤ To emphasize the central role that genetics in the life of all organisms. ➤ To develop critical thinking skill and research aptitude among students, by introducing the frontier areas of the biological science.
	M – 403	Practical	<ul style="list-style-type: none"> ➤ This will provide a basic understanding of methods and designs that can be used for further study and research.
	M – 501	Animal Physiology	<ul style="list-style-type: none"> ➤ This course will provide students with a deep knowledge in physiology. ➤ Explaining various aspects of physiological activities of animals with special reference to humans. ➤ By the end of the course, students should be familiar with physiological systems in vertebrate systems.
	M – 502	Biochemistry and Bioenergetics	<ul style="list-style-type: none"> ➤ This course will provide students with a deep knowledge in biochemistry and bioenergetics. ➤ Defining and explaining the basic principles of biochemistry and bioenergetics useful for biological studies for illustrating different their structure, function and metabolism.



	M – 503	Endocrinology and Immunology	<ul style="list-style-type: none"> ➤ This course will provide students with a deep knowledge in endocrinology and immunology. ➤ Students will acquire a broad understanding of the hormonal regulation of physiological processes in invertebrates and vertebrates as well as immunological aspects.
	M – 504	Biological Techniques and Biostatistics	<ul style="list-style-type: none"> ➤ To inspire the students in learning the frontier areas of biological sciences. ➤ To update and expand basic Biostatistics skills. ➤ To equip the students with the knowledge of modern developments and recent trends in biological sciences
	M – 505	Practical (Physiology)	<ul style="list-style-type: none"> ➤ This also will provide a basic understanding of the experimental methods and designs that can be used for further study and research.
	M – 506	Practical (Biochemistry & Endocrinology)	<ul style="list-style-type: none"> ➤ This also will provide a basic understanding of the experimental methods and designs that can be used for further study and research.
	M – 601	Animal Behaviour	<ul style="list-style-type: none"> ➤ To impart basic knowledge on animal different behavioural patterns and their role.
	M – 602	Evolution and Adaptation	<ul style="list-style-type: none"> ➤ To acquire knowledge about the evolutionary history of earth (living and non living). ➤ To study the distribution of animals on earth, its pattern, evolution and causative factors and its adaptation
	M – 603	Economic Zoology	<ul style="list-style-type: none"> ➤ To learn the different resources available on earth. ➤ To Study global environmental problems and its impact on the social insects. ➤ To appreciate the perspectives of Man and learn the strategies for conservation. ➤ To develop a holistic approach that is necessary for sustainable development.



	M – 604	Biotechnology, Bioinformatics and Computer Applications	<ul style="list-style-type: none"> ➤ To emphasize the central role that biotechnology plays in the life of all organisms. ➤ To introduce the student to some of the present and future applications of bio-sciences. ➤ To develop critical thinking skill and research aptitude among students, by introducing the frontier areas of the biological science. ➤ To update and expand basic informatics skills and attitudes relevant to the emerging knowledge of society and also to equip the students to effectively utilize the digital knowledge resources in learning ➤ To equip the students with the knowledge of modern developments and recent trends in biological sciences
	M – 605	Practical (Economic Zoology)	<ul style="list-style-type: none"> ➤ To impart knowledge regarding the commercially available insects and their life form.
	M – 606	Project	<ul style="list-style-type: none"> ➤ To make aware of the basic philosophy of science, concepts and scope ➤ To develop proper scientific mind, culture and work habits

Programme	Course Code	Name of the course	Course Specific Outcome
Model 2: B. Sc. Zoology (Pure/General)	E – 101	Biosystematics, Taxonomy, Wildlife Conservation and Management	<ul style="list-style-type: none"> ➤ To give a thorough understanding in the fundamental principles of systematic in which the animals are how to classify according to their characters and what are theories which have to follow for classification is studied. ➤ International rules of nomenclature and classification is studied. ➤ To understand different levels of biological diversity ➤ To create interest for conservation of biodiversity and its management



	E – 201	Ecology, Evolution and Adaptation	<ul style="list-style-type: none"> ➤ To create appreciation on diversity of life on earth ➤ To understand different levels of biological diversity ➤ To learn biodiversity estimation techniques ➤ To create interest for conservation of biodiversity and its management ➤ To acquire knowledge about the evolutionary history of earth (living and non living). ➤ To study the distribution of animals on earth, its pattern, evolution and causative factors and its adaptation
	E – 301	Animal Diversity – I (Non – Chordates)	<ul style="list-style-type: none"> ➤ To make the student observe the diversity in non-chordates and their systematic position. ➤ To make them aware of the economic importance of some classes. ➤ To make the student observe the diversity in non-chordates.
	E – 302	Practical: Animal Diversity – I (Non – Chordates)	<ul style="list-style-type: none"> ➤ To make them aware of the economic importance of some classes. ➤ To make the student observe the diversity in non-chordates.
	E – 401	Animal Diversity – II (Chordates)	<ul style="list-style-type: none"> ➤ To make the student observe the diversity in chordates and their systematic position. ➤ To make them aware of the economic importance of some classes. ➤ To make the student observe the diversity in chordates.
	E – 402	Practical: Animal Diversity – II (Chordates)	<ul style="list-style-type: none"> ➤ To make them aware of the economic importance of some classes. ➤ To make the student observe the diversity in chordates.



	E – 501	Cell Biology, Genetics and Developmental Biology	<ul style="list-style-type: none"> ➤ To emphasize the central role of Cell biology, being the most developing areas of biological science. ➤ To make aware of different cell organelles, their structure and role in living organisms. ➤ To develop critical thinking, skill and research aptitudes. ➤ To emphasize the central role that genetics in the life of all organisms. ➤ The achievement of above objectives along with periodic class discussions of current events in science, will benefit students in their further studies in the biological/physiological sciences and health-related fields, and will contribute to the critical societal goal of a society
	E – 502	Practical	<ul style="list-style-type: none"> ➤ This will provide a basic understanding of methods and designs that can be used for further study and research.
	E – 601	Physiology, Biochemistry and Endocrinology	<ul style="list-style-type: none"> ➤ This course will provide students with a deep knowledge in physiology. ➤ Explaining various aspects of physiological activities of animals with special reference to humans. ➤ This course will provide students with a deep knowledge in biochemistry. ➤ Students will acquire a broad understanding of the hormonal regulation of physiological processes in invertebrates and vertebrates.
	E – 602	Practical	<ul style="list-style-type: none"> ➤ This also will provide a basic understanding of the experimental methods and designs that can be used for further study and research.

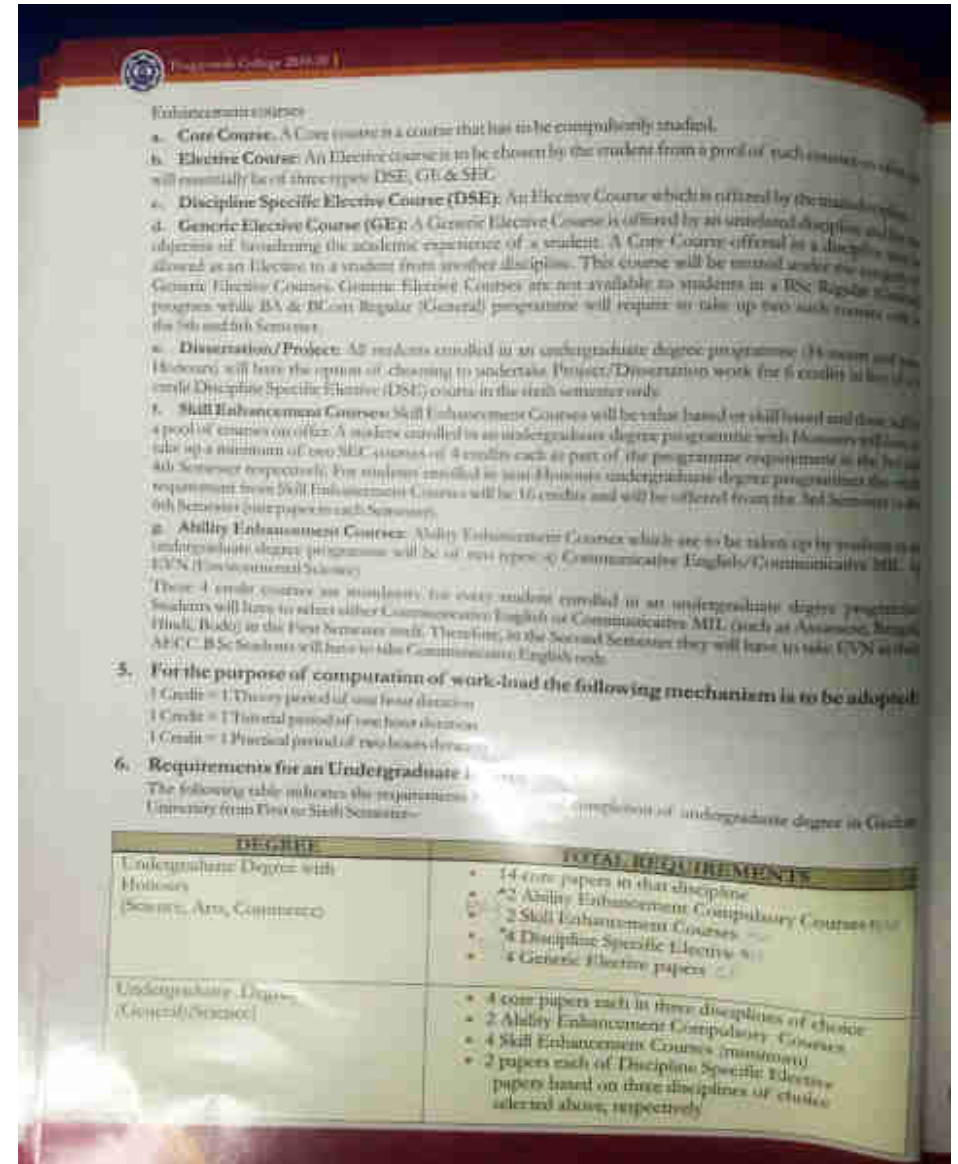
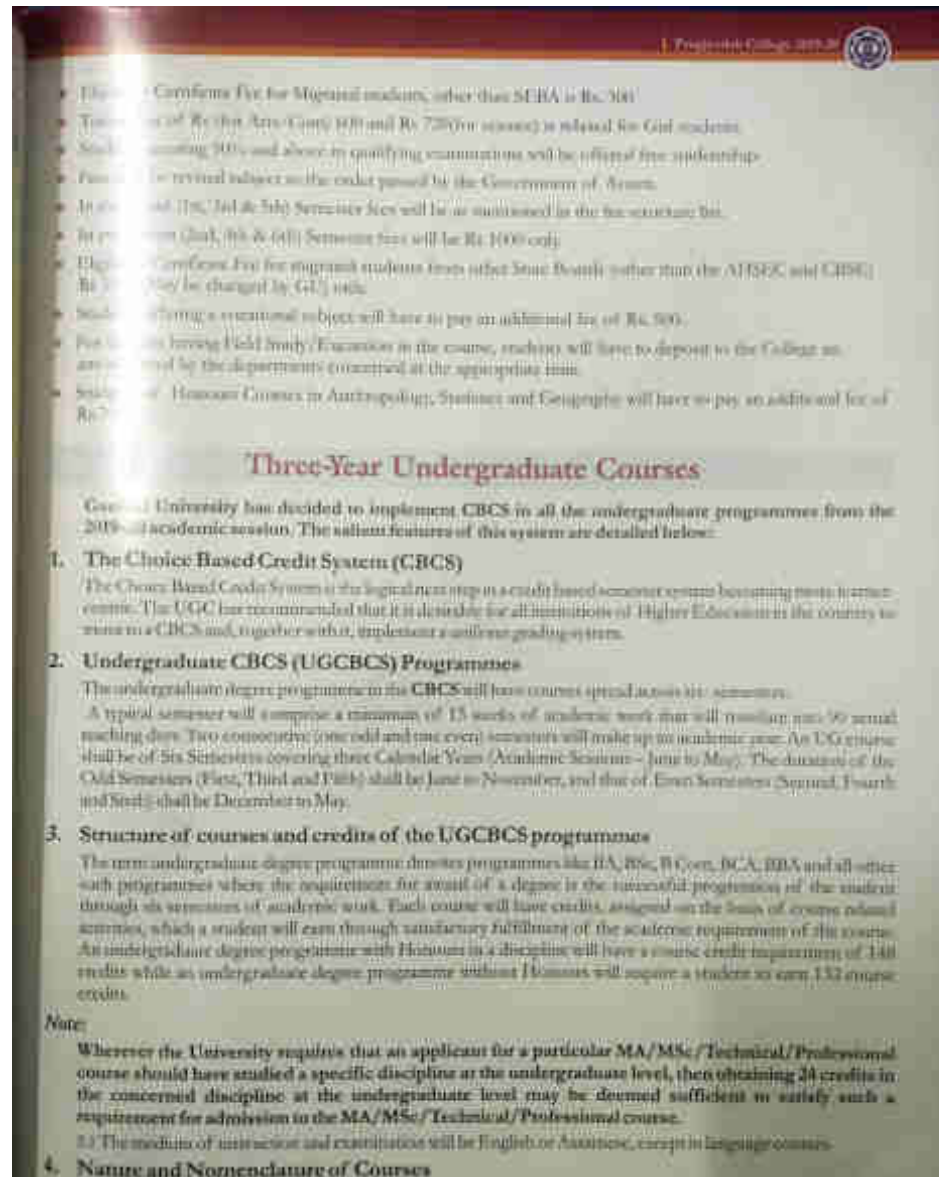


Link address to complete syllabus and marks distribution of UG programme by Gauhati University

1. <https://sites.google.com/a/gauhati.ac.in/syllabus-ug-old/>
2. <https://sites.google.com/a/gauhati.ac.in/syllabus-ug-cbcs/>



CBCS BASIC STRUCTURE IN COLLEGE PROSPECTUS



NON-CBCS BASIC STRUCTURE IN COLLEGE PROSPECTUS

REGULAR COURSE OF STUDY-THREE YEAR DEGREE - ARTS
Total Seat - 380 (Section: A - 175 & Section: B - 175)

Sl. No.	COMPULSORY SUBJECTS
1	General English
2	Either MII (Assamese/Bengali/Bodo/Hindi) or Alternative English
3	Environmental Studies

ELECTIVE SUBJECTS: (Any Combination of the following):

Sl. No.	Major in Arts	Available Elective Combinations for BA (Any One)
1	Anthropology	History / Political Science
2	Assamese	Political Science / History / Philosophy / Education
3	Bengali	Political Science / History / Philosophy
4	Economics	Mathematics / Statistics / Geography
5	Education	History / Philosophy / Sanskrit
6	English	Political Science / History / Philosophy
7	Geography	Economics / Political Science
8	History	Education / Political Science / Sanskrit / Second Language / Anthropology
9	Hindi	Political Science / History / Philosophy
10	Mathematics	Statistics / Economics
11	Philosophy	Education / Political Science / Sanskrit / Second Language
12	Political Science	Economics / Education / Sanskrit / Second Language / History / Philosophy / Geography
13	Sanskrit	Political Science / Philosophy / Education / History
14	Statistics	Mathematics / Economics

Travel and Tourism Management (TTM) is a vocational subject meant for the pass course only. A student who takes TTM cannot do Major in a subject.

REGULAR COURSE OF STUDY-THREE YEAR DEGREE - SCIENCE
Total Seat - 350 (Section: A - 175 & Section: B - 175)

Sl. No.	COMPULSORY SUBJECT
1	Functional English

Elective Subjects: (Any Combination of the following):

Sl. No.	Major in Science	Available Elective Combinations	Eligibility
1	Anthropology	Zoology & Botany	
2	Botany	Zoology & Chemistry Zoology & Anthropology	Must pass Biology & Chemistry in HS
3	Chemistry	Physics & Mathematics	Must pass Physics & Mathematics in HS
4	Computer Science	Physics & Mathematics Mathematics & Statistics	Must pass Physics & Mathematics in HS
5	Geography	Chemistry & Geology	
6	Geology	Physics & Mathematics Chemistry & Geography	
7	Physics	Chemistry & Mathematics Computer Science & Mathematics Geology / Mathematics	Must pass Chemistry & Mathematics in HS
8	Mathematics	Physics & Chemistry Physics & Computer Science Physics & Geology Economics & Statistics Computer Science & Statistics	
9	Statistics	Economics & Mathematics Computer Science & Mathematics	
10	Zoology	Chemistry & Botany Botany & Anthropology	
11	Economics	Statistics & Mathematics	

SELF FINANCING COURSES
THREE YEAR DEGREE COURSE IN COMMERCE (SIX SEMESTERS)


COMMERCE
Bachelor of Commerce (B.Com.)
AVAILABILITY OF SEATS

Section A	750 Seats
Section B	150 Seats

*Both General and Major Courses are available.

ELIGIBILITY:
Candidates who have passed the HSSC Examination of the Assam Higher Secondary Education Council (AHSEC) or any other equivalent examination.

B. SUBJECTS OFFERED (1 st Semester)		
General Papers	Core Papers	Specialized Papers
01. Business / Mathematics / Fundamentals of Insurance / Business Mathematics in Computer for Major	02. Financial Accounting I 03. Business Organization and Entrepreneurship Development 04. Indian Financial System	05. Cost Accounting / Human Resource Management / Hotel Micro Finance / A World Wide Web




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