2.6.2. *Attainment of Programme outcomes and course outcomes are evaluated by the institution.*

Describe the method of measuring the level of attainment of PSOs and COs in not more than 500

Programme Specific Outcome Department of Mass Media

Media Technologies: The 3 year programme in Media Technologies is specially designed to meet the needs and challenges of the fast changing media industry. The course lays much emphasis on the praxis of media along with considerable sound theoretical concepts and understanding. The course with its initial focus on Journalism, Photography and Audio production is today transforming to meet the challenges of fast paced user driven digital media landscape with the introduction of new papers such as new media and development communication. Keeping in mind the media industries constant demands for multi skilled personalities, this course is specially and uniquely designed to give students a wide exposure of the media world ranging from advertising, public relations, video production, media studies, image and graphic designing, media research, ethical and legal aspects of media to event planning and media entrepreneurship. With its focus on emerging communication technologies, concepts and skill learning this course aims to equip and enable students to be readily absorbed in the media profession immediately after the completion of the course.

Core emphasis*- Journalism, Photography, Radio Production, Development Communication and New Media*

Mass communication and video Production: In this comprehensive course, with emphasis on electronic film production, our graduates will: Keep abreast of developments in digital communication, learn to use multimedia, become proficient in designing media research campaigns, enhance their creative writing abilities, explore integration and enculturation through the media, master media entrepreneurship and marketing, and, gain invaluable on-the-job training in a variety of media institutes.

Besides finding ready employment even while prosecuting their studies, further professional and academic opportunities are burgeoning right across the country and abroad for these graduates.

Core emphasis - *Video Technology, Video Production, Audio for Film and Filmmaking.*

Method of measuring the level of attainment of PSOs and COs

>The department makes sure that each course is carried out with utmost practice of the desired requirements of each subject.

>Theory classes are usually taken before any practical component is introduced to the students.

>Practical classes are either conducted outdoor or inside the allotted studio.

>The department is equipped with an audio studio, a video studio and an editing suite for the students.

>Computer application courses such as Photoshop, Coreldraw, premiere and animation are conducted at the IT annexe where each student is allotted with a single computer system.

>Class tests are conducted after one or two units are completed.

>Presentations and seminars are held at least once in every semester. These presentations are either in form powerpoint, paper charts or audio visual.

>Field Research is encouraged for audio, video, film, photography and studio productions. Students are to make a report of the recce.

> Towards the end of the semester the students have to compile all their work and make a portfolio or a show reel.

> Film Screenings and review sessions are held at the department for the final semester students at the end of the sixth semester.

> Students carry out a photography exhibition of their work every year. It is one of the major highlights of the department where they would conceptualise, get funding and curate the exhibition themselves under the guidance of a few teachers.

> Strict attendance is observed in the department. All students are expected to have a minimum of 75% attendance in all subjects.

2.6.1. Describe Course Outcomes (COs) for all the courses and mechanism of communication within a minimum of 500 characters and a maximum of 500 words.

Paper Number	Name of the Paper	Unit: Name of the Unit	Mechan-ism of commu-nication	Course Outcome
Paper 1	***Introductory Economic Theory***	I: Consumer Behavior	Lectures, Slides, Notes, Videos	To introduce the basic concepts of micro economic theory.
		II: Production and Cost		To examine the concepts of production functions in the long run and short run and to introduce the concepts of costs and revenue.
		III: Market Structure and Factor Pricing		To examine how price and output is determined in different market conditions. And also to introduce the theories of factors of production.
		IV: National Income		To examine the concepts and measurement of National Income and Green Accounting.
		V: Output and Employment		To understand the classical and neo classical theories of Income and Employment.
Paper II	***Development and Environmental Economics***	I: Concepts and Measurement		To introduce the basics of Development Economics, with discussions on concepts of development, growth, poverty, inequality, and institutions.
		II: Theories of Economic Growth and Development		To use tools of Macroeconomics to understand long run economic phenomena like growth, migration, effort, etc.
		III: International Aspects of Economic Development		To reflect on the role of trade and globalization, on the process of development.
		IV: Environment and Ecology		To understand the economic causes of environmental problems, using theoretical principles and empirical evidence.
		V: Market Failure and Environment		To study the governance of communities and organizations to help answer questions of sustainable growth.
Paper III	***Indian Economy***	I : Features of the Indian Economy		To understand the development paradigm in India post-independence, and to evaluate its impact on economic and social indicators.
		II: Agriculture		To examine agriculture specific polices, and their impact in shaping trends in agricultural indicators in India.
		III: Industry		To examine industry specific polices, and their impact in shaping trends in industrial indicators

				in India.
		IV: Economic Reforms		To understand the role of the economic reforms in shaping and improving economic performance.
		V: Economy of the North-Eastern Region		To review major trends in economic indicators and policy debates in North-Eastern India, in the post-Independence era.
Paper 4	***Mathematics For Economists***	I: Basic Concepts		To introduce the students to the fundamentals of sets, variables, relations and functions, the straight line and its slope.
		II: Matrix and Determinants		To understand the various types, rules and methods of matrices and also their application in economic theories.
		III: Differential Calculus		To expose the students to the concept and rules of differentiation including partial and total differentiation.
		IV: Optimization using Differential Calculus		To introduce the students to the application of differentiation in Economics through optimization problems using the concepts of costs and revenue.
		V:Integration		To study the concepts of Integration, Producer's and Consumer's Surplus.
Paper 5	***Advanced Economic Theory***	I: Consumer Theory		To have an in depth understanding of consumer behavior and ordinal utility.
		II: Theory of Production		To ensure a detailed understanding of production functions by introducing Cobb Doughlas and Constant Elasticity of Substitution Production function,
		III: Market Structure and Welfare Economics		To study more market structures and also to introduce the concept of welfare economics.
		IV(Money, Banking and Inflation)		To examine the theories of demand and supply of money, functions and working of central and commercial banks and to discuss the concept of Inflation.
		V:Trade Cycle		To review the theories of trade cycle and to discuss the concepts, components of Balance of Payments.
Paper VI	***International Economics***	I: Introduction, Basic Tools and Trade Theories		To introduce theoretical and empirical concepts in International Trade, with a thorough analytical grasp of trade theory.
		II: Terms of Trade and Gains from Trade		To examine the effects of international trade policies like free trade and protection, on domestic and global welfare.
		III: Tariffs and		To understand the different tools of international trade policy and their

		Quotas		consequences on trade.
		IV: Balance of Payments and Foreign Exchange		To understand a country's Balance of Payments account, and how exchange rate movements between currencies are determined.
		V: International Macro Economic Policies		To introduce the International Monetary System, International Organizations, Regional Trade Blocs, and to reflect on role of the state in the era of globalization.
Paper VII	***Statistics***	I: Central Tendency and Dispersion		To introduce the fundamentals of statistics.
		II: Correlation and Regression		To understand the concepts of correlation and regression and their interpretation in economic analysis.
		III: Time Series		To examine the uses of time series analysis and the various methods in problem solving.
		IV: Index Numbers		To study index numbers and to identify their uses in Economics.
		V: Probability and Sampling		To familiarize the students with the concept and uses of probability and sampling.
Paper VIII	***Public Economics***	I: Introduction to Public Economics		To introduce theoretical and empirical concepts in Public Economics, with a thorough analytical grasp of the implications of government intervention.
		II: Theories of Taxation		To study government taxation using formal analysis, as well as to demonstrate and compare welfare effects of different policy options.
		III: Theories of Public Expenditure		To study government expenditure using formal analysis, and to demonstrate a critical understanding of different theories.
		IV: Fiscal Policy and Fiscal Federalism		To study the efficiency and equity aspects of taxation of the centre and states, and the issues of fiscal federalism and decentralisation in India.
		V: Public Debt and Budget		To introduce the main concepts in public finance, and to understand issues in government expenditure.

2.6.2. Describe the methods of measuring level of attainment of PSOs and COs in not more than 500 words.

The PSOs of the Department of Economics is as follows:

- To introduce students to the fundamentals of Micro and Macro Economics at the elementary level.
- To present the basic concepts of development economics and to educate students about the issues pertaining to environmental economics.
- To acquaint the students to the features of the Indian economy including agriculture, industry and various economic reforms in the country.
- To study the essential mathematical and statistical tools used in analyzing various economic principles and relations.
- To understand the basic international economic principles, theories and their applications. To also familiarize students with monetary and fiscal policies of the government.

The following are some **methods** adopted by the department to ensure that PSOs and COs are attained:

- Regular interaction and inquiry with students.
- Analysis and reflection with students after each topic to ensure attainment of course outcome.
- Feedback from students is encouraged to ensure positive learning outcomes.
- Departmental review meetings are held regularly to evaluate the learning outcomes.
- Assessment through assignments is also followed to allow the learner to critically asses the theories and topics learnt.
- Exams in the form of class tests are conducted to evaluate the learning pace of each student.
- Self-evaluation of students is encouraged.
- One-on-one mentoring of students is also followed to keep track of a student's progress in the program.
- Open book exams are also held to nurture analytical skills and encourage problem solving.

NORTH EASTERN HILL UNIVERSITY
HEADQUARTER : SHILLONG
INTERNAL ASSESSMENT
SEMESTER DEGREE EXAMINATIONS, 2021
Sixth Semester/BSc/Computer Science)/Regular

BATCH-2018

College : St. Anthony's College
Subject : Project
Paper : CS601P (Paper VII)

University Roll No.	Name	IA
S1800985	Akash Kewar	11
S1800986	Anish Pandey	11
S1800987	Ankit Thapa	11
S1800988	Ashmita Kanwar	10
S1800989	Banteilang Marai	9
S1800990	Banisha Warjri	12
S1800991	Benjamin Lammeki Majaw	10
S1800993	Floryqueen Ingjal	11
S1800995	Hka Awng Lashi	10
S1800996	Kevin Aurelius Kurbah	11
S1800997	Kushal Das	12
S1800998	Manisha Singh	10
S1800999	Manish Kumar Singh	11
S1801001	Medonlakador Syiem	12
S1801002	Nibir Talukdar	11
S1801003	Nuncy Phanjom	10
S1801005	Ravi Pandey	10
S1801006	Rohit Chettri	10
S1801007	Ruth D Marak	10
S1801008	Samha Oo Passah	12
S1801009	Samuel Martin Marbaniang	11
S1801011	Steffi Zobiakzami	9
S1801012	Steven Johnson Lyngdoh Nongbri	10
S1801014	Subham Sharma	8
S1801016	Wahengbam William	10
	Total Marks	12

Total marks for this paper	50
External Examination	38
Internal Assessment	12

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Principal
Date

Office Seal

Signature of the
Head of the Department

6th sem Project

Group 2

Roll No	Name	Marks(100)
19STAMCA013	JOSHUA SYIEMLIEH	72
19STAMCA014	K PYNKYNMAWLANG SYIEMLIEH	80
19STAMCA009	GAUTAM KUMAR RAY	72
19STAMCA011	HITIMO SEMY	80
19STAMCA017	Paia-Ea-Salanmi Sumer Lyngdoh Talang	92
19STAMCA019	PARISHA KHARUMNUID	60
19STAMCA020	SACHIN KUMAR RAY	88
19STAMCA021	SOURAV JYOTI TAMULI	88
19STAMCA022	YONA KHARPRAN	60

Consolidated Report/Statistics

Sl. No	Roll No	M/F	Name	DOB	Group	Shift	Rel.	Cat.	State	Sem.	Honours	Electives
1	P20DCA01	M	MEBAJYNSURTAM LYNGDOH KIRI	13-10-1996	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
2	P20DCA02	M	Roopam Bhattacharjee	02-07-1996	1	Day	HIN	GEN	ML	2	Computer Applications	Computer Application
3	P20DCA03	M	Derek Lyngdoh	16-12-1998	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
4	P20DCA04	M	Wellborn Kharsati	07-09-1998	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
5	P20DCA05	M	Rabit Kalai	03-05-1996	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
6	P20DCA06	M	Lurshai Kharbani	17-06-1996	1	Day	RC	ST	ML	2	Computer Applications	Computer Application
7	P20DCA07	M	Banrilang Lyngdoh Nonglait	16-08-1997	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
8	P20DCA08	M	Jahangir Alom	27-01-1994	1	Day	IS	GEN	AS	2	Computer Applications	Computer Application
9	P20DCA09	F	Priyanka Daimary	09-01-1999	1	Day	HIN	ST	AS	2	Computer Applications	Computer Application
10	P20DCA10	M	Ksanborlang Dhar	22-02-1991	1	Day	OT	ST	ML	2	Computer Applications	Computer Application
11	P20DCA11	M	Jovanjeet Singh	28-09-1997	1	Day	SK	SC	CD	2	Computer Applications	Computer Application
12	P20DCA12	F	Neeha Boro	22-07-1998	1	Day	HIN	ST	ML	2	Computer Applications	Computer Application
13	P20DCA13	M	Aiban Dorphang	23-12-1998	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
14	P20DCA14	F	Rikynti Thabah	13-10-1996	1	Day	RC	ST	ML	2	Computer Applications	Computer Application
15	P20DCA15	F	ANNIE K NONGKHENG	16-04-1998	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
16	P20DCA16	F	Shimtilang Lyngdoh Kynshi	13-01-1996	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
17	P20DCA17	M	Dakyrshan Kharnaior	22-12-1997	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
18	P20DCA18	F	Rose Mary Snaitang	13-11-1998	1	Day	CH	ST	ML	2	Computer Applications	Computer Application

Consolidated Report/Statistics

Sl. No	Roll No	M/F	Name	DOB	Group	Shift	Rel.	Cat.	State	Sem.	Honours	Electives
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3	P20DCA03	M	Derek Lyngdoh	16-12-1998	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
4	P20DCA04	M	Wellborn Kharsati	07-09-1998	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
5	P20DCA05	M	Rabit Kalai	03-05-1996	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
6	P20DCA06	M	Lurshai Kharbani	17-06-1996	1	Day	RC	ST	ML	2	Computer Applications	Computer Application
7	P20DCA07	M	Banrilang Lyngdoh Nonglait	16-08-1997	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
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10	P20DCA10	M	Ksanborlang Dhar	22-02-1991	1	Day	OT	ST	ML	2	Computer Applications	Computer Application
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17	P20DCA17	M	Dakyrshan Kharnaior	22-12-1997	1	Day	CH	ST	ML	2	Computer Applications	Computer Application
18	P20DCA18	F	Rose Mary Snaitang	13-11-1998	1	Day	CH	ST	ML	2	Computer Applications	Computer Application

VI SEMESTER BSC-2021

Paper Name: **CS-601P: Project**

Roll No	Name	Analysis Marks (25)	Design Marks (25)
S1800985	AKASH KEWAR	24	21
S1800986	ANISH PANDEY	19	21
S1800987	ANKIT THAPA	22	23
S1800988	ASHMITA KANWAR	19	21
S1800989	BANTEILANG MARAI	18	18
S1800990	BANISHA WARJRI	24	23
S1800991	BENJAMIN LAMMEKI MAJAW	19	17
S1800993	FLORYQUEEN INGJAL	22	23
S1800995	HKA AWNG LASHI	20	18
S1800996	KEVIN AURELIUS KURBAH	21	23
S1800997	KUSHAL DAS	24	23
S1800998	MANISHA SINGH	20	21
S1800999	MANISH KUMAR SINGH	21	21
S1801001	MEDONLAKADOR SYIEM	24	25
S1801002	NIBIR TALUKDAR	22	20
S1801003	NUNCY PHANJOM	20	21
S1801005	RAVI PANDEY	14	16
S1801006	ROHIT CHETTRI	21	20
S1801007	RUTH D MARAK	20	18
S1801008	SAMHA OO PASSAH	24	25
S1801009	SAMUEL MARTIN MARBANIANG	14	22
S1801011	STEFFI ZOBIAKZAMI	18	18
S1801012	STEVEN JOHNSON LYNGDOH NONGBRI	16	22
S1801014	SUBHAM SHARMA	16	16
S1801016	WAHENGBAM WILLIAM	16	20

पूर्वोत्तर पर्वतीय विश्वविद्यालय
जिला: पूर्वी खासी हिल्स, शिलांग - 793022
मेघालय (भारत)

North-Eastern Hill University
District: East Khasi Hills, Shillong - 793022
Meghalaya (India)

No.Ex/PG-Dip/Comptr. Applns./2nd Sem/July.2022- 7728. Dated, 16th August. 2022.

NOTIFICATION

Appear = 18
Clear = 17
Percentage = 94.44%

The Result of the **PG Diploma in COMPUTER APPLICATIONS, St. Anthony's College**, Shillong,**2nd Semester (Regular) Examination, held in July,2022** is hereby declared provisionally as appended below **in order of Merit**.

Rank	Roll No.	Name of Candidates	CGPA	Final Letter Grade
1.	P21DCA03	Mevarieca Lyngdoh Nonglait	5.79	O
2.	P21DCA12	Gery Mexwell Lyngdoh Nonglait	5.72	O
3.	P21DCA21	Shahunlin Marthong	5.61	O
4	P21DCA09	Adoryllene Dkhar Sawian	5.57	O
5	P21DCA08	Rijoysius Lyngkhoi	5.49	A
6	P21DCA18	Aleric Terry Shylla	5.43	A
7	P21DCA02	Sophia Shylla	5.41	A
8	P21DCA17	Isaak Dkhar	5.33	A
9	P21DCA19	Marva Kharkongor	5.27	A
10	P21DCA24	Banrilin Wanniang	5.22	A
11	P21DCA06	Badamutjanai Diengdoh	5.20	A
12	P21DCA04	Karen Kyntiew Blah Tariang	5.02	A
13	P21DCA14	Gordon Evanson Thabah	4.95	A
14	P21DCA16	Ready Kupar Lyngdoh	4.88	A
15	P21DCA15	John Paul Lyngdoh Marchilong	4.65	A
16	P21DCA11	Alvin Simon Nonghuloo	4.61	A
17	P21DCA10	Wanshanbok Kharkongor	4.49	B
18	P21DCA23	Banteilang Kharbani	-	F

Officer on Special Duty (Exams)

No. Ex/PG-Dip/Comptr Applns./ 2nd Sem./July.2022/- 7728. Dt. 16-8-22.

Copy for information to:-

1. S.P.A to V. C for Vice Chancellor's kind information.
2. The Principal, St. Anthony's College, Shillong.
3. Certificate Cell, NEHU, Shillong.
4. Statistical Cell, NEHU, Shillong.
5. System Analyst, Exam Department, NEHU, Shillong.=He is requested to upload the above notification in the NEHU Official Website immediately
6. Notice Board.

Officer on Special Duty (Exams)

Course outcomes and Programme Outcomes

Department of Khasi

Course Outcome

Semester – I
Khasi Elective
Paper – I
Paper Code No: KHELH – 101
Name of the Paper – Culture in Khasi Literature

In this paper students will learn on some of the cultural aspects of the Khasis. Firstly, they will learn the traditional marriage rituals practiced by the Khasis. Secondly, they will learn the traditional judiciary system of the Khasis. Thirdly, they will also learn the monolith culture of the Khasis. Fourthly, the students will also learn the traditional folk literature of the Khasis.

Semester – II
Khasi Elective
Paper – II
Paper Code No: KHELH – 201
Name of the Paper – History of Khasi Literature

Through this paper the students will learn the literary history of the Khasis. It is expected that a student will have a knowledge on the literary history of Khasi Drama, Khasi Poetry, Khasi Fiction and Khasi Prose writings.

Semester – III
Khasi Elective
Paper – III
Paper Code No: KHELH – 301
Name of the Paper – Khasi Language Study

This paper focuses on the study of Khasi language. In general, the students will learn the basic concepts of linguistics and language and in particular they will learn the historical aspect of Khasi language and the different aspects of linguistics study in Khasi language.

Semester – IV
Khasi Honours
Paper – IV
Paper Code No: KHH – 401
Name of the Paper – Khasi Literary Criticism

In this paper students will learn the basic concepts of literary criticism. Students will learn the meaning of criticism, types of criticism, functions of criticism. Also students will learn the different aspects of novel, drama and poetry.

Semester – V
Khasi Honours
Paper – V
Paper Code No: KHH – 501
Name of the Paper – Khasi Drama

This paper has four text of Khasi Drama. In this paper students will be familiarizing with the story, themes, techniques and structural innovations. Students will also learn the relevance of the theme and issues as reflected in the four texts, with the situation of the present society in particular and the present world in general.

Semester – VI
Khasi Honours
Paper – VI
Paper Code No: KHH – 502
Name of the Paper – Khasi Fiction

This paper has four text of Khasi fiction. In this paper students will be familiarizing with the story, themes, techniques and structural innovations. Students will also learn the relevance of the theme and issues as reflected in the four texts, with the situation of the present society in particular and the present world in general.

Semester – VII
Khasi Honours
Paper – VII
Paper Code No: KHH – 601
Name of the Paper – Literature in Translation

In this paper student will be familiarize with literature of western writer through translated texts/version. Students will learn the translated poetic genre of ballad and elegy, in fiction they will learn the fictional allegory and in drama they will learn the dramatic genre of farce. Through the analysis of themes and issues students will be able to have some knowledge on the culture and society of the western world.

Semester – VIII
Khasi Honours
Paper – VIII
Paper Code No: KHH – 602
Name of the Paper – Khasi Poetry

In this paper students will learn the traditional Khasi poetry called *ka phawar*. Students will also learn the poetic genres of elegy, lyric, sonnet, ballad and allegory. Beside learning the poetic genres, students will also be familiarizing with the dominant theme and issues as represented by the authors.

Semester – IV
Khasi MIL for BA
Paper – I
Paper Code No: KH MIL – 401

This paper is divided into three parts, that is, Part A: Poetry, Part B: Drama and Part C: Fiction and Prose. In poetry students will learn how environment is a source of inspiration to humans. In drama students will learn the historical events of the Khasi chief with the East India Company. And in fiction and prose students will learn some of the social issues prevalent in the Khasi society and they will also learn the basic concept of Khasi moral ethics.

Semester – IV
Khasi MIL for BCom
Paper – I

This paper is divided into three parts, that is, Part A: Fiction and Prose, Part B: Poetry and Part C: Letter and Report writing in Khasi. In prose and fiction students will learn on what is the basic knowledge a business needs to know, the agricultural activities of the Khasis and challenges. In poetry they will learn the destruction of forest land by felling trees for business purpose. And in letter and report writings students will learn how to write business letters and business reports. Also they will learn on the different forms of writings of business letters and business reports.

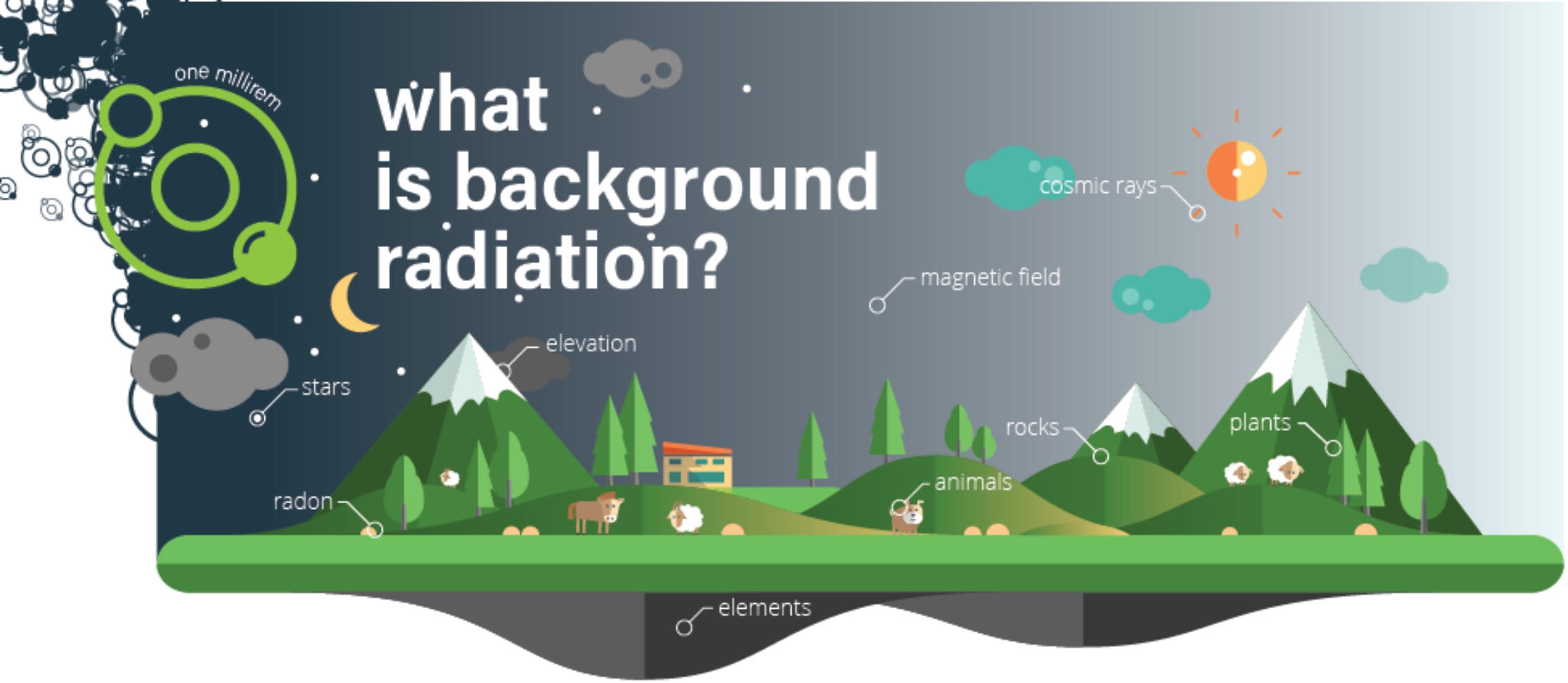
Programme Outcomes

The objectives of the programme is to educate the students in the artistry and utility of Khasi language through the study of Khasi literature, language and culture. To encourage students in literary creativity writings. To prepare the students to be academically excellence, intellectually competent, morally upright, socially committed and spiritually inspired person. Graduates students are capable to perform research, critical analysis and to critically appreciate the cultural texts of the different periods of time.

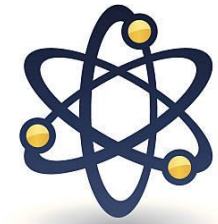
The study of Khasi poetry, Khasi Drama and Khasi Fiction will make the students to be familiar with the Khasi literary text and genres. They should be able to apply the critical and theoretical approaches to the reading and analysis of not only literary text but also of a cultural text. It is expected that students should be able to identify, interpret and describe the critical ideas, values, themes and issues that are present in a literary and cultural text. They should understand how these themes, issues, ideas and values are still relevant or not in the present society. Students are capable to write critical appreciations, to analyse and to interpret texts. Students should be able to gather knowledge from secondary resources from a variety of written and electronic sources. Last but not the least students should be able to understand how to communicate and interpret human experiences, activities, the ethic and ethnic values through literary representation.

Measurement of the Background Radiation in St. Anthony's College, Shillong

Presenters:
Evelynelycia Kharbuki
Parkles Theo Linda Lyngkhei
Philabetshwa Nongrum

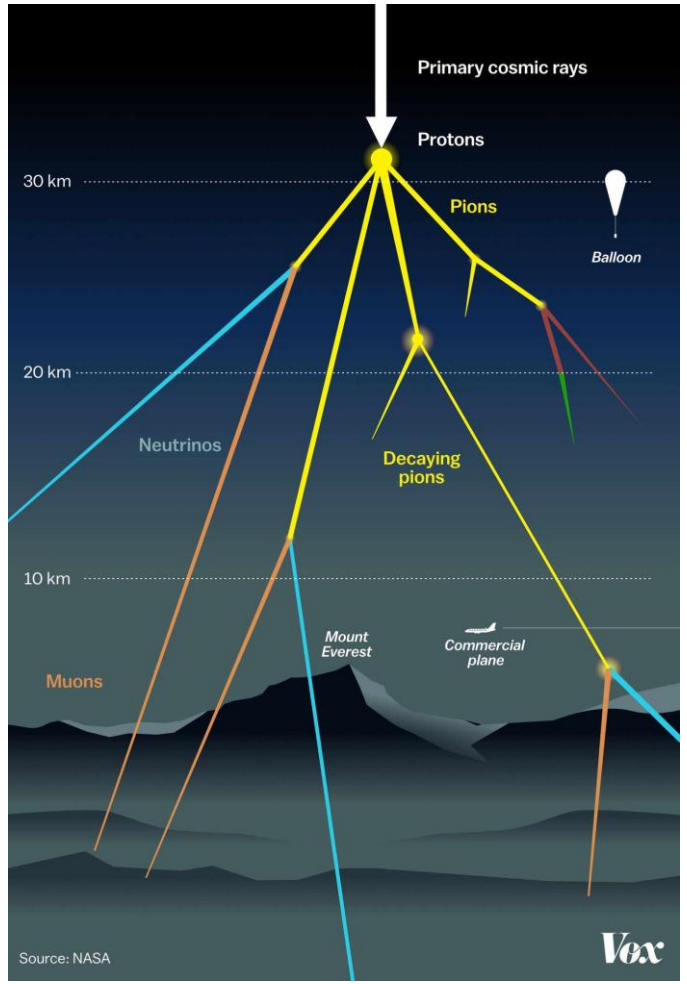


Background radiation is a measure of the level of ionizing radiation present in the environment at a particular location which is not due to deliberate introduction of radiation sources.



SOURCES OF BACKGROUND RADIATION

- *Natural sources*
  - ➢ Terrestrial Radiation
    - Radon gas
    - Rocks, soil
    - Certain foods
  - ➢ Cosmic Radiation
- *Artificial sources*
  - ➢ Medical diagnostic exposures
  - ➢ Nuclear tests and accidents



TYPES OF RADIATION DETECTORS

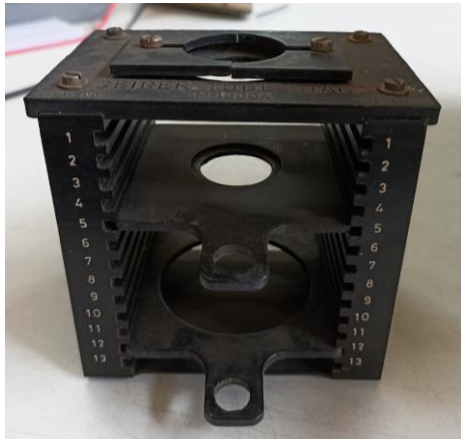
There are three different main types of radiation detectors:

- Scintillation Detectors
- Semiconductor Detectors
- Detectors based on gas ionization
  - Ionization Chamber
  - Proportional Counter
  - Geiger Muller Counter

GEIGER MULLER (G.M) COUNTER

Geiger Counting System, Type GC602A

End Window G.M Detector in a PVC Enclosure, GM 120



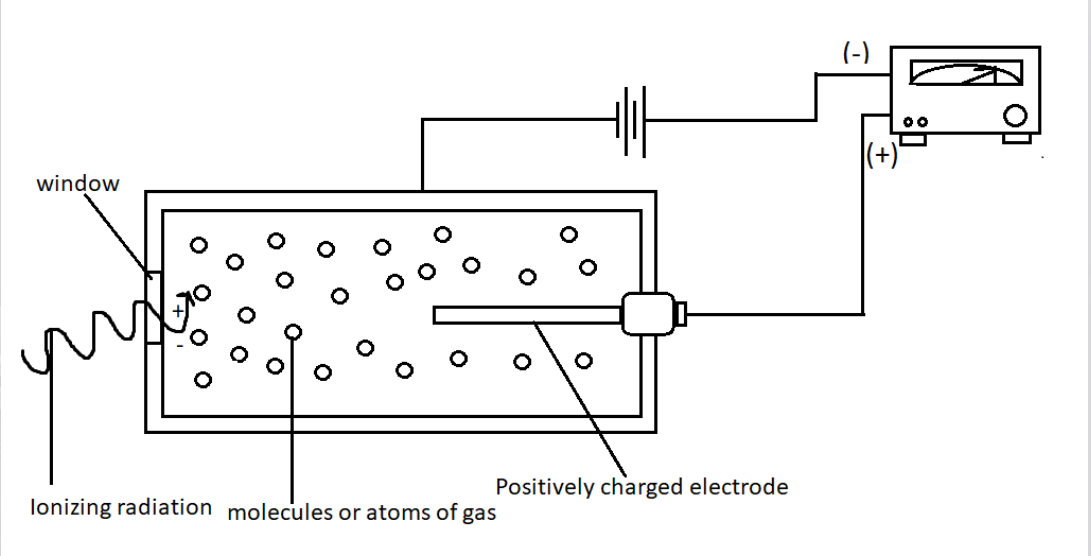
G.M detector stand

GEIGER MULLER COUNTER

Principle

Components

- GM tube
  - Anode
  - Cathode
  - Gaseous mixture
  - Mica window
- GM Counter
  - Power switch
  - Cursors
  - Start and Stop buttons
  - Voltage control



Methodology

- Preset time
- Counting
- Avalanche

WHAT ARE WE DOING EXPERIMENTALLY?

- Study the characteristics of the GM Counter
- Find out the operating voltage
- Take the count readings:
  - Location: Physics Lab 1
  - Time: 3 hrs
  - Morning and Afternoon
  - Two days or more

CONCLUSION: After performing this experiment, we will obtain the amount of background radiation in the college.


THANK YOU!

OBJECTIVE

NUMERICAL STUDY OF BINDING ENERGY OF A NUCLEUS AND IT'S VARIATION WITH MASS NUMBER (using computer programming)

-DAMESKHEMSHISHA KHARPRAN
-RISHAILANG L LYNGKHOI
-YESTAR JANONG

Guided by *S Saikia*

NUCLEUS

May, 1911: Rutherford discovered Atomic Nucleus.

The diameter of a hydrogen is about 1.7× 10^-15 m

Denoted by: ${}_{z}X^{A}$

A=atomic mass

Z=2atomic number

Nuclear binding energy: It is defined as the amount of energy required to *bind or to break* the protons and neutrons in a nucleus

Mathematically is expressed as:

$B.E = \Delta m \times c^2$

where=Δm is mass defect

c is velocity of light in free space

Mass defect: The difference in the mass of the nucleus and its constituent particles(protons and neutron) is called mass defect.

Mathematically is expressed as;

$$M=\{(Zm_p+Nm_n)-M_{nucleus})\}\ a.m.u$$

Where, m_p->mass of proton

m_n->mass of neutron

Z->atomic number

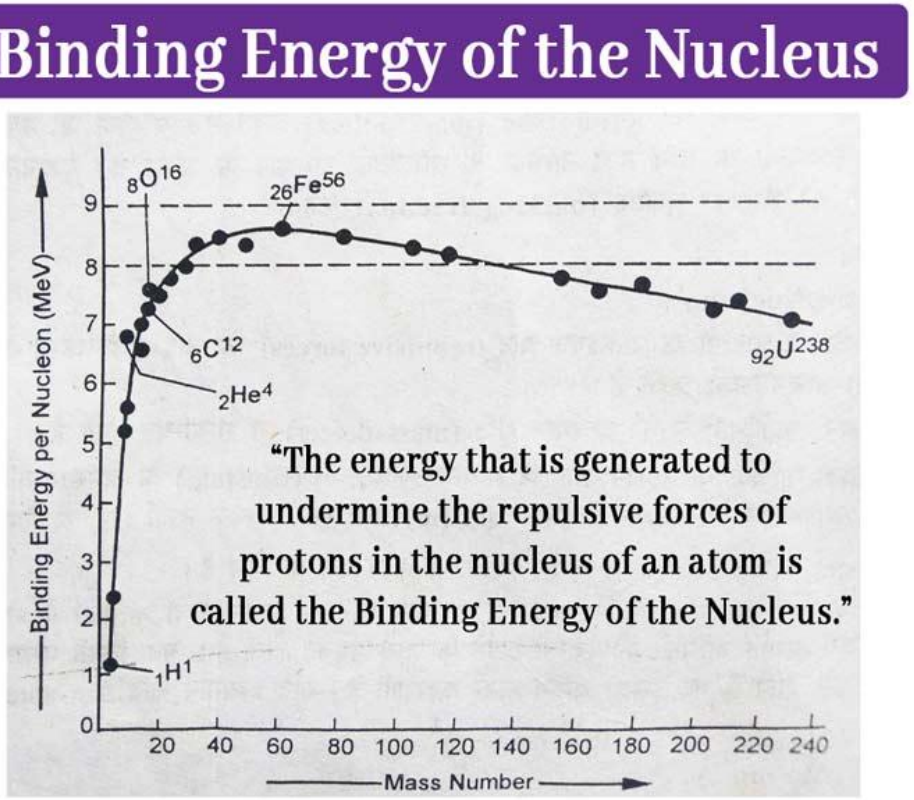
A->mass number

$$N=A-Z$$

BINDING ENERGY PER NUCLEON

- The binding energy per nucleon Is the measure of the stability of the nucleus(*more the value more is the stability*)

- Fe is more stable than
- uranium



Liquid drop model:

Weizsacker's semi-emperical mass formula:

$M(A,Z)=Zm_H+Nmn-B(A,Z)/c2$

$B(A,Z)=a_vA-a_sA^{2/3}-a_cZ(Z-1)A^{-1/3}-a_{sym}(A-2Z)^2/A+da_p$

B(A,Z) is the binding energy of the nucleus expressed as a sum of five terms, each term representing different properties of the nucleus.

a_v->volume energy constant
av->volume energy)
a_c-> coulomb energy constant
a_{sym}->Asymmetry energy constant
a_p->Pairing energy constant

Thank you

References: Atomic and nuclear physics
by Shatendra Sharma, encyclopedia

Topic for Project Work

1. Thermal properties of some materials used as ceiling in building. (Expt.)

Kim Rosy Singson, Chameikho Charles Lajio (MK)

2. A study of Cosmic Background radiation in St. Anthony's College, Shillong. (Expt.)

Evelynelycia Kharbuki, Parkles T.L. Lyngkhei, Philabetshwa Nongrum (MK)

3. To Study the 1-D random walk problem. (Computer programming based problem).

Agnes Buhpang (DK)

4. To study the basics of non-linear dynamics by studying the Logistics MAP. (Computer programming based problem)

5. Numerical study of Binding energy of a nucleus and its variation with Mass number. (Computer programming based problem.)

Dameskhemshisha Kharpran, Rishailang Lyngkhoi, Yester Janong (SS)

6. A Basic Study of Plasma, its properties and applications. (Theoretical: Survey, Review work.)

Saphimosha Suram, Ialinda Nongrum, Ehkupar Tymmenniang (SS)

7. Numerical study of a particle in a box problem. (Computer programming based problem.)

8. Calculation of energy eigen value of a particle trapped in a spherical cavity. (Theoretical)

Maxidonald Nangkhlaw, Joaquim Mebanshan Mawrie, Wanshanmeki R. Syngkrem

9. Calculation of structure factor of Liquid Helium-II. (Theoretical)

Aiban Pynhun Khonglah, Justmin Pohlong, Edmon Nongsteng (SC)

10. A study of Type-I superconductivity (Survey, Review and Estimation of Transition temperature.)

Neivisita Hinge, Heigrumjam Dhaneswori Devi, Nefisa Bakordor Nongbsap (SC)

11. Construction of a portable mobile Charger. (Expt.)

Mung Ran Awng, Mung Ching Awng, Joshwa L. Infimate (MB)

12. A basic study of Climate dynamics from Physics point of view. (Theoretical)

Larisha Nongsiej, Pynshailang Kharbani, Lajiedskhemlang L. Nonglait (MB)

13. A basic study of Solar power and its effect. (Theoretical.)

Micheal Koijam, Nominal Marngar, Shamson Henam (FI)

14. A study of Heat Engines and their efficiency. (Theoretical.)

Rajdeep Das, Banskhemlang Marwein, Allwyn Noel Kharsyntiew (FI)

15. Study of Zeeman Effect in NMR spectroscopy. (Survey and Review.)

Phalankupar Sangriang, Artistar Kharwar (VK)

16. Numerical study of Damped and Force Oscillation.

Department of Philosophy

Programme Specific Outcomes (PSO) of Philosophy Honours.

The three year Under Graduate course in Philosophy Honours initiates students to Epistemology and Metaphysics, Logic, Indian Philosophy, History of Modern and Western Philosophy and Ethics, Philosophy of Religion and Existentialism. The course develops interests in learning philosophy with clarity and analysing the philosophical concepts with philosophical reflection and analysis. The course also helps to develop critical thinking. After successfully completing the 3year degree course the following Programme Specific Outcomes outcome are expected of the students:

PSO1: After completion of the three-year honours course in Philosophy students are expected to read the philosophical books written by various philosophers on various philosophical topics to get an overall idea of philosophy and also for widening the philosophical knowledge, to create enthusiasm and interest to do progress in research works and to write small articles on various philosophical topics. To develop the logical thinking capabilities, to inspire other students also to study philosophy.

PSO2: first of all, to developed love for the subject, their power of constructive critical thinking and to provide a reflective, logical and systematic solutions to the problems faced in philosophy, - either metaphysical, empirical social, political and religious.

PSO3: to decide and progress in the philosophical areas which interest them most and to pursue in that area, inquire, understand and to write research articles for the further progress of those areas.

PSO4: to learn and understand the different methods of doing philosophy, understanding their significance and applying them in the relevant areas.

PSO5: At the end of the programme the students are expected to learn the research methodology and to apply them validly while writing research papers. While donning so they are expected to consult both the primary and the secondary sources of books and also to study research articles both contemporary and modern.

PSO6: Recognizing and understanding the different values- personal, social and global, recognizing the value of the total existence and their harmonious relations, building ability to live in harmony in the midst of diversity and its importance

PSO7: Identifying the inherent problems of philosophy and endeavour to reflect logically on them and providing a necessary solution to it.

PSO8: to understand the distinctive features of each philosophical systems either traditional, contemporary or modern and value them.

PSO9: to understand the importance and significance of the historical development of each philosophical tradition and attain knowledge from them.

PSO10: to develop a proper understanding and significance of the different kinds of traditions, social change, the role of philosophy in guiding each and every branches of social and political theories and also evaluating them.

PSO11: Acquiring the knowledge to develop the valid argumentation and developing the ability to listen and understand others view points and also to develop the ability and ability to establish their own views.

PSO12: to understand the ethical and moral implications and to learn applying them in all the spheres of life either academic or non-academic

PSO13: with the knowledge in philosophy students can attain the capacity to become either a good Philosopher, Counsellor, Academician, Politician and Social scientist. etc.

Course Outcomes (COs)

The Department follows the syllabus and curriculum structure as mandated by the affiliating University. During the three years of the B.A Philosophy Honours programme, spread over 6 semesters, 8 theory papers are taught. The semester wise distribution of the papers and their course outcomes are listed below.

Semester I	
Name of the paper: Epistemology and Metaphysics (PHIL- 11) Paper I	**Unit – I: Meaning and Method of Philosophy** CO1: From this unit the students will learn about What is philosophy, the definition, method and scope of philosophy., the relation between philosophy and science, philosophy and religion. **Unit -II: Sources of Knowledge** CO2 : Western: from this unit the students will learn the different theories of empiricism, rationalism and critical philosophy and their critical appreciation. Indian: From this unit the students will learn about Naya Pratyaksa and the different kind of Pratyaksa., Anumana - Distinguish between Svartha Anumana and Parartha anumana, Nyaya syllogism, the different kinds of anumana, comparison between nyaya anumana and Aristotlean syllogism, Upamiti and Shabda Pramana. **Unit - III: Theories of Truth**

	CO 3: From this unit the students will learn about the coherence theory of truth, correspondence theory of Truth and the Pragmatic theories of truth and their application in philosophical theory formation along with their critical analysis. **Unit - IV: Theories of Reality** CO 4: From this unit the students will learn the different theories of reality such as-the different theories of Monism, Dualism, and Pluralism, Realism and Idealism and their critical analysis. **Unit – V: Metaphysical categories** CO5: from this unit the students will learn - the different interpretations of substance and causality and their critical appreciation, the different characteristics of Space and time.

Semester II	
Name of the paper: Logic Phil: 21 Paper II	After Studying this paper, the students will be able to get a broader concept about the main objective of logical reasoning. CO1. Students will acquire the basic concepts on logic, sentences, judgements, statements, propositions and arguments. CO2. Definitions: For example – stipulative, Lexical, Precising, theoretical, Persuasive, denotative, Connatative and ostensive definitions. CO3. Detect mistake in reason or reasoning in practice – Fallacy of relevance, Ambiguity and presumption. CO4. Translate ordinary languageарguments into standard form categorical syllogism, evaluate immediate inference and syllogism using the traditional square of opposition. CO5. Symbolic Logic: Value of symbols, truth

	functions, tautologous, contradictory and contingent statement forms. Testing Arguments form and Argument for validity by the method of truth table.

Semester III	
Name of the paper: Social and Political Philosophy Phil: 31 Paper III	**Unit I : Nature of Social and Political Philosophy** COI: from this unit the students will learn about the nature and scope of social and political philosophy, the relation between social philosophy and social philosophy relation between political philosophy and political science. **Unit II: Major Concepts** CO2: here the students will learn the relation between individualism and socialism, the characteristics of state and the nature of Sovereignty, the meaning and characteristics of Nation. **Unit III: Social and Political Ideas:** CO3 : from this unit the students will learn the ideas of what is called Liberty ,Equality, the meaning of Fraternity and the significance of justice. **Unit IV: Political Concepts** CO4: from this course content the students will learn about the theories of democracy, socialism, fascism and anarchism their merits and demerits. **Unit-V: Nature of transformation** CO5: from this unit the students will learn What is reformation? What is revolution? Under what conditions revolution is justified, rebellion, what is tradition and its kinds, distinguish between tradition and modernity, the factors responsible for social change

Semester IV	
Name of the paper: Indian Philosophy Phil: 41 Paper IV	**Unit i: Introduction** CO1: the course outcome of this paper is to learn the meaning of Indian Philosophy, the salient features of Indian Philosophy, distinction between the nastika (Heterodox) and the Astika (Orthodox) schools. **Unit-II: Carvaka,Buddhism and Jainism** CO2: the course outcome is to critically explain and examine Carvaka materialism, Pratitya- Samutpada kshanika-vada,Nirvana, anekantavada,ekantavada, the meaning of 'syat' and sapta-bhangi-nayaand the naya of jaina. **Unit-III: Samkhya and Yoga** CO3: What is Prakrti? State and Explain the characteristics of prakrti. What is Purusa? the characteristics of Purusa. plurality of Purusa, proofs for the existence of Prakrti and Purusa , the evolution of Prakrti and its teleology, What is Yoga, the eight limbs of Yoga. **Unit IV: Nyaya,Vaisesika and Mimamsa** CO4: from tis unit students will learn about Pratyaks (Nyaya), the different kinds of Pratyaksa. Savikalpa and nirvikalpa Pratyaksa, laukika and alaukika Pratyaksa, Anumana-distinction between Svartha Anumana and Parartha Anumana , the valid conditions of Shabda Pramana, Karma and Dharma of Mimamsa, Padartha - the different kinds of Padartha. Dravya as a kind of Padartha, the different kinds of Dravya, guna and its kinds, samanya,Samavaya Abhava and its kinds. CO5: the nature of Brahman in Samkara's advaita vedanta. Maya - the characteristics of maya, nature of Jagat, atman and moksa. The nature of Brahman in Ramanuja's Visistadvaita Vedanta- cit and acit and moksa.

Semester V	
Name of the paper: History of Modern Western Philosophy Phil: 51 Paper V	The importance and usefulness of studying the history of modern western philosophy is that it is based on logical reasoning and as such it is more consistent than any other paper besides Logic. **Unit I - Descartes, Spinoza and Leibnitz:** Descartes, the father of modern western philosophy employed mathematical method into modern philosophy, his methods are deduction, by studying Descartes, the students learn to use their reasons before accepting anything as the truth. By study Spinoza the students understand that he is the meeting point between the western and eastern philosophy. Spinoza identifies God with Nature and as such there is so much similarity between Spinoza and Shankara. In Leibnitz's spiritualistic pluralism one connects psychology with physics. **Unit II - Locke and Berkeley:** The British empiricists lay more importance on sense perception rather than on innate ideas, with Locke the students learn to analyse their ideas derived from sense perception where some of our ideas are actually have no reality outside the mind. In Berkeley one learns the importance of God the infinite spirit. Though he is also an empiricist like Locke but for Berkeley there can be no ideas unless there is a mind to perceive them. **Unit III – Hume:** In Hume the most consistent empiricist than Locke and Berkeley, we seem to reach the climax of empiricism as a theory of knowledge, the importance of Hume is that he made realize that there is no permanent stuff or substance be it physical or mental. He even rejects metaphysics since we are limited to sense perception as to what we can know. Yet by way of criticising Hume,

	one understands that besides sense perception as human we do have our moral and religious consciousness which are a part of experience. **Unit IV – Kant** Kant the German critic is a great synthesizer where he synthesizes both empiricism and reason, where experience by themselves cannot be knowledge unless they are thought of and understood by the mind. Hence the importance of studying Kant is that experience cannot be taken for granted as a source of knowledge by itself, for experiences to be knowledge they must be thought of and understood by the understanding or the mind. **Unit V – Hegel** Hegel the German idealist, and like Kant in his dialectical method, he synthesizes thesis and an antithesis into a synthesis. In his Alsolute idealism one understands the similarities between him and Ramanuja in the east.

Semester V	
Name of the paper: Philosophy Of religion Phil: 52 Paper VI	Religion is a special aspect of human experience and therefore needs a philosophical explanation. The function of philosophy of religion is to determine the significance and value of human experience of religion. By studying this paper, students can come in acquaintance with the following concepts related to philosophy of religion, CO1. Definitions of religion, description about the nature as well as scope of philosophy of religion and its relation and differences to theology. CO2. Reason, Faith, Revelation and Mystic experience as the foundation of religious beliefs.

	CO3. The Judaic-Christian concept of God, The idea of God in Hinduism and Tribal religions and the arguments for the existence of God will be our major concern. CO4. The problem of suffering and liberation in Christianity, Hinduism, Buddhism and Jainism will imbibe in the students to think rationally about the various religious problems in our society. CO5. Students will be familiarise with some socio-religious issues like Tolerance, Conversion and secularism.

Semester VI	
Name of the paper: Ethics Phil: 61 Paper VII	**Unit – I: Nature and Scope of Ethics** CO1: From this course content students will learn the definition and nature of moral philosophy, the scope of moral philosophy the nature of moral judgements: the subjective nature and the objective nature, the relation and the difference between ethics and meta-ethics. **Unit -II: Moral Concepts** CO2 : From this course content students will understand what id 'Good 'in the ethical terms, the different traditional theories of 'Good', can 'Good" be defined?, the meaning of 'Right', the meaning of 'Duty' ,the relation between 'Good' , 'Right' and 'Duty'. What is virtue- with reference of the Greek philosophers: Plato- the four Cardinal Virtues and Aristotle-moral and intellectual Virtues etc. **Unit - III: Ethical Theories** CO3: In this course content the students will learn the teleological theories of Hedonism- its meaning, origin, the psychological and moral development of Hedonism, the theory of Utilitarianism with reference to Bentham and J.S. Mill Along with their critical analysis. Ants Categorical Imperative – the disinclination

	between the hypothetical and categorical imperative, nature of 'good will', the three maxims will also be learnt by the students. **Unit - IV: Theories of Punishment** CO 4: From this course content students will learn the from this course content students will learn the three major theories of Punishment-the Preventive theory and its critical analysis, the Reformative theory and its critical analysis, the Retributive theory and its critical analysis. **Unit – V: Issues in Applied Ethics** CO5:From this course content students will learn the theory of Purusartha – dharma ,Artha,kama and moksha and its application in ethical life, the doctrine of Niskama-karma of Bhagavad-Gita -its meaning ,purpose and destiny in achieving the ultimate goal of life i.e. moksa,Ahimsa -its historical development the Gandhian notion of Ahimsa and its significance in ethical conduct and self-realisation.

Semester VI	
Name of the paper: Existentialism Phil: 622 Paper VIII	Existentialism is an optional paper, the department opted this particular paper because it deals with man's predicament existing in the world of space and time. **Unit I: General Introduction** Existentialism actually does not have a domain or a subject matter as such because the individuals' predicaments are different not only in different societies but also within the society due to the uniqueness and traits of human personalities. However, it lays stress on human emotions like anxiety or despair, finitude, alienation, freedom, etc. As far as existentialism is concerned existence ends in death. **Unit II: Nietzsche** The importance of studying Nietzsche is exemplified in his doctrine of 'the will to

	power', as the saying goes if there is a will there is a way. The will to power is a driving force in achieving the goal. **Unit III Kierkegaard** Though Kierkegaard appears to be individualistic, yet his doctrine of "subjectivity is the truth. Truth is subjectivity" is very useful for every individual, to exist authentically one needs to find out the truth for himself for which he is going to live and die for. **Unit IV: Heidegger** The importance of learning Heidegger's philosophy is the awareness of our temporality in this world, as such one must not waste time in mundane things which Heidegger calls 'everydayness' , being potentially death each individual ought to understand human relationships and care for each other. **Unit V: Sartre** Sartre's concept of freedom is very useful because his freedom is not a pleasant experience but a yoke, by realization of one's freedom, he or she is also responsible and accountable of the consequences of the actions done. Another important topic in Sartre is his concept of 'bad faith' or self-deception because the realization that man's being is nothing he tries to fill up this nothingness with something which he is not. As far as existentialism is concerned man can create his own values.