DIGBOI COLLEGE, DIGBOI

COURSE PLAN

Session: 2022-23

DIGBOI COLLEGE, DIGBOI

COURSE PLAN

Session: June, 2022 – December, 2022

Odd Semester

DIGBOI COLLEGE, DIGBOI

Course Plan

CBCS COURSE

Session-June 2022 to December 2022

1. Name of the Teacher- Dr. Abhijit Mahanta
Course –Honours / Generic – Generic
Class/Semester-1st sem
Name of the Paper-Chemistry GE 101
Units Assigned- Unit 3 and 5
Marks Assigned- 18

Class	Topic/ Unit	Remarks
1.	Unit 3-Fundamental of Organic Chemistry-Electronic Displacement Effect-Inductive effect, electromeric effect	
2.	Unit 3- Fundamental of Organic Chemistry-Electronic Displacement effect -Resonance, hyperconjugation	
3.	Unit 3- Fundamental of Organic Chemistry-Cleavage of bond	
4.	Unit 3- Fundamental of Organic Chemistry-Nucleophile and electrophile	
5.	Unit 3- Fundamental of Organic Chemistry-Carbocation, carbanions, free radical	
6.	Unit 3- Fundamental of Organic Chemistry-Carbocation, carbanions, free radical	
7.	Unit 3- Fundamental of Organic Chemistry-Strength of acid and base	
8.	Unit 3- Fundamental of Organic Chemistry-Aromaticity, Huckels rule	
9.	Unit 5—Aliphatic Hydrocarbons-Alkanes-Preparation	
10.	Unit 5- Aliphatic Hydrocarbons -Reaction of alkanes	
11.	Unit 5- Aliphatic Hydrocarbons -Preparation of alkene	
12.	Unit 5- Aliphatic Hydrocarbons -Reaction of alkene	
13.	Unit 5- Aliphatic Hydrocarbons -Reaction of alkene	
14.	Unit 5- Aliphatic Hydrocarbons -Preparation of alkyne	
15.	Unit 5- Aliphatic Hydrocarbons -Reaction of alkyne	

2. Name of the Teacher- Dr. Abhijit Mahanta
Course –Honours / Generic – Honours
Class/Semester-3rd sem
Name of the Paper-Chemistry C-302
Units Assigned- Unit II, IV
Marks Assigned- 24

Class	Topic/ Unit	Remarks
1.	Unit II-Preparation of alcohol	
2.	Unit II-Bouvaelt Blanc reduction, preparation of gycols	
3.	Unit II-Preparation of glycerol and properties	
4.	Unit II-Preparation of phenol, acidity and factor affecting it	
5.	Unit II- Ring substitution reaction	
6.	Unit II-Reimer Tiemann and Kolbes Schmidt reaction	
7.	Unit II-Fries and Claisen rearrangment	
8.	Unit II-Preparation of epoxide	
9	Unit II-Reaction of epoxide with alcohol, ammonia, and LiAlH4	
10	Unit IV: Preparation, properties of monocarboxylic acid	
11	Unit IV: Preparation, properties of dicarboxylic acid	
12	Unit IV: Preparation, properties of dicarboxylic acid	
13	Unit IV: Preparation, properties of dicarboxylic acid	
14	Unit IV: Preparation, reaction of acid chlorides, amides, anhydrides	
15	Unit IV: Preparation, properties of dicarboxylic acid	
16	Unit IV: Claisen, Diekmann and Reformatsky reaction	
17	Unit IV: Hoffmann and Curtius rearrangment	

3. Name of the Teacher-Dr Abhijit Mahanta
Course –Honours / Generic – Generic
Class/Semester-3rd sem
Name of the Paper-Chemistry GE-301
Units Assigned- Unit 7,8
Marks Assigned- 16

Class	Topic/ Unit	Remarks
1.	Unit 7- Carbohydrates -classification and properties	
2.	Unit 7-Structures of glucose, reactions, configuration	
3.	Unit 7-Structures of glucose, reactions, configuration	
4.	Unit 7-Structures of fructose, reactions, configuration	
5	Unit 7-Structures of fructose, reactions, configuration	
6	Unit 7-Structures of fructose, reactions, configuration	
7.	Unit 7-Mutarotation, ascending and descending of monosaccharides	
8.	Unit 8- Preparation of amino acid	
9.	Unit 8-Properties of amino acid	
10.	Unit 8- Reaction of amino acid	
11.	Unit 8-Primary, Secondar, tertiary structure of protein	
12.	Unit 8-Primary, Secondar, tertiary structure of protein	
13.	Unit 8-Primary, Secondar, tertiary structure of protein	
14.	Unit 8-Primary, Secondar, tertiary structure of protein	

4. Name of the Teacher- Dr. Abhijit Mahanta
Course –Honours / Generic – Honours
Class/Semester-5 th sem
Name of the Paper-Chemistry C-501
Units Assigned- Unit II, III, IV
Marks Assigned- 28

Class	Topic/ Unit	Remarks
1.	Unit II-Amino acids, peptide and classification	
2.	Unit II-Synthesis of Amino acids, peptide and classification	
3.	Unit II-Study of peptides	
4.	Unit II-Study of peptides	
5.	Unit II-Study of peptides	
6.	Unit II-Synthesis of peptides	
7.	Unit II-Synthesis of peptides	
8.	Unit II-Synthesis of peptides	
9	Unit II-Protecting group	
10	Unit II-Protecting group	
11	Unit III: Introduction of enzyme, classification	
12	Unit III: Features of enzyme	
13	Unit III: Mechanism of enzyme action	
14	Unit III: Factors affecting enzyme action	
15	Unit III: Roll of coenzyme and cofactor in biology	
16	Unit III: Enzyme inhibitor	
17	Unit III: Enzyme inhibitor	
18	Unit III: Enzyme inhibitor	
19	Unit III: Enzyme inhibitor	
20	Unit IV: Introduction to oil and fat	
21	Unit IV: Fatty acids and properties	
22	Unit IV: Hydrogenation, saponification of oil and fat	
23	Unit IV: Rancidity of oil and fat	
24	Unit IV: Iodine no, acid value of oil and fat	

5. Name of the Teacher- Dr. Abhijit Mahanta
Course –Honours / Generic – Honours
Class/Semester-5 th sem
Name of the Paper-Chemistry DSE-502 (Green Chemistry)
Units Assigned- Unit 3, 4
Marks Assigned- 25

Class	Topic/ Unit	Remarks
1.	Unit 3-Green synthesis of organic compounds	
2.	Unit 3-Green synthesis of organic compounds	
3.	Unit 3-Green synthesis of organic compounds	
4.	Unit 3-Microwave assisted green reactions of organic compounds	
5.	Unit 3-Microwave assisted green reactions of organic compounds	
6.	Unit 3-Ultrasound assisted green reactions of organic Compounds	
7.	Unit 3-CO2 as surfactant	
8.	Unit 3-Healthier fats and oils, C2C carpeting	
9	Unit 3-Rightfit pigment, bioplastic	
10	Unit 3--Green technologies	
11	Unit 4-Future trends in green chemistry	
12	Unit 4-Future trends in green chemistry	
13	Unit 4-Future trends in green chemistry	
14	Unit 4-Solventless green reaction	
15	Unit 4-Combinatorial green chemistry	

COURS PLAN FOR MAJOR COURSE (CBCS)
JUN TO DEC 2022 (ODD SEMESTER)

Name of the Teacher:- Achyut Saikia
Department of Assamese
Digboi College, Digboi

Class: BA 1st Semester
Name of the paper: History of Assamese Literature
Paper Code: C-1
Unit Assignes: Uni - 4
Marks Assign: 16

Class	Topic/Unit	Remarks
1	Introduction to the whole course and relevant books and journals	
2	Different periods of early Assamese literature	
3	Sankardeva and his times – social, political and religious aspects.	
4	Sankari Yuga – First golden age of Assamese literature, brief discussion	
5	Discussion of Indian Bhakti Movement	
6	Life and works of Sankardeva	
7	Poetic creation of Sankardeva	
8	Ankiya Nat and other works	
9	Life and literary works of Madhadev	
10	Differences of Ankiya nat and Borgeet of Sankardeva and Madhadev.	
11	Aananta Kandali and Sridhdar Kandali	
12	The Manasa Poets, Mankar, Pitambar, Durgabor and others	
13	Life and literary works of Ram Saraswati	
14	Do	
15	Other Vaishnava poets of the period	
16	Revision	
17	Revision	
18	Revision	
19	Introduction to the whole course and relevant books and journals	
20	Different periods of early Assamese literature	

Class: BA 3rd Semester
Name of the paper: Literary Criticism
Paper Code: C-5
Unit Assignes: Uni - 4
Marks Assign: 22

Class	Topic/Unit	Remarks
1	Introduction	
2	Novel Definition	
3	Do	
4	Various Aspects of Novel	
5	Story	
6	Character	
7	Other Aspects	
8	Other Aspects	
9	Short Story Definition	
10	Do	
11	Story	
12	Character	
13	Other Aspects	
14	Other Aspects	
15	Revision	
16	Revision	

Class: BA 3rd Semester
Name of the paper: Selection from Assamese Poetry
Paper Code: C-6
Unit Assignes: Uni - 1
Marks Assign: 16

Class	Topic/Unit	Remarks
1	Introduction	
2	History of Assamese Poetry - brief Description	
3	Pratna Asomiya Kabita	
4	The Pre-Sankardeva Period	
5	The period of Sankardeva	
6	Do	
7	Panchali poets	
8	The post-Sankardeva Period	
9	Do	
10	The age modern Assamese poetry	
11	Background	
12	The Orunodoi period	
13	The Pre-Romantic Period	
14	The Romantic Period	
15	Do	
16	Modernism in Assamese poetry	
17	The Post-War Period	
18	Contemporary Assamese Poetry	

Class: BA 5th Semester
Name of the paper: Introduction to Indian Literature
Paper Code: DSE-2
Unit Assignes: Full Paper
Marks Assign: 80

Class	Topic/Unit	Remarks
1	Introduction to the course	
2	The idea of Indian literature	
3	Do	
4	Do	
5	Characteristics of Indian Literature	
6	Do	
7	Do	
8	Do	
9	Indian litereature- early period	
10	Do	
11	Modern Indian literature	
12	Do	
13	Indian literature- post-colonial period	
14	Do	
15	Modernism in Indian poetry	
16	Banalata Sen by Jivanananda Das	
17	Do	
18	Aswarohi by Romakanta Rath	
19	RamakantaRath as a modern poet	
20	Discussion of the poem	
21	Do	
22	Kath ke ghantiya by S Doyal Saxena	
23	About the poet	
24	Discussion of the poem	
25	Do	
26	Indian short story- brief discussion	
27	Sashti by Rabindranath Tagor	

28	About the author	
29	Discussion	
30	Discussion	
31	Do	
32	Khuri Aita by Premcgand	
33	About the author	
34	Discussion	
35	Discussion	
36	Indian English novel	
37	Do	
38	Two leaves and a bud by M. Anand	
39	About the author	
40	Assamese tgranslation by Babul Tamuli	
41	The story	
42	Characterisation	
43	Do	
44	other aspects of the novel	
45	Do	
46	Aesthetic value	
47	Do	
48	Revision	
49	Revision	

DIGBOI COLLEGE, DIGBOI

Course Plan (Session June- December 2022)

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B.A. 1st Semester

Name of the Paper- Hindi Sahitya Ka Itihas: (Ritikaal Tak), C-1

Units Assigned- Unit – 1 & Unit - 4

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Hindi Sahitya Ka Kaal Vibhajan	
3.	Hindi Sahitya Ka Kaal Vibhajan	
4.	Hindi Sahitya Ka Kaal Vibhajan	
5.	Aadikaal Ke Naamkaran Ki Samasya,	
6.	Aadikaal Ke Naamkaran Ki Samasya,	
7.	Aadikaal ki Pravritiya/ Visheshatayen	
8.	Aadikaal ki Pravritiya/ Visheshatayen	
9.	Aadikaal ki Prishthabhoomi – Rajnaitik	
10.	Aadikaal ki Prishthabhoomi – Samajik	
11.	Aadikaal ki Prishthabhoomi – Sanskritik & Dharmik	
12.	Aadikaal ki Sahitik Dharayen- Sidha Sahitya	
13.	Aadikaal ki Sahitik Dharayen- Nath Sahitya	
14.	Aadikaal ki Sahitik Dharayen- Jain Sahitya	
15.	Aadikaal ki Sahitik Dharayen- Raso Sahitya,	
16.	Aadikaal ki Sahitik Dharayen- Laukik Sahitya	
17.	Raso Shanda ki vyutpati	
18.	Raso Sahitya ka Parichaya	
19.	Prithviraj Raso	
20.	Bisaldev Raso, Sandesh Rasak,	
21.	Dingal & Pingal	
22.	Tutorial / Discussion	
23.	RitiKaal Namkaran	
24.	Ritikaal ka Naamkaran,	
25.	Ritikaal ka Naamkaran,	
26.	Ritikaaleen Paristhitiyan,	
27	Ritikaaleen Paristhitiyan,	
28	Ritikaaleen Paristhitiyan.	
29.	Ritikaaleen Smanya Pravritiyan/ Visheshtaye,	
30.	Ritikaaleen Smanya Pravritiyan/ Visheshtaye,	
31.	Ritikaaleen Vividh Kaavyadhaaraayen : (Ritibaddha,).	
32.	Ritikaaleen Vividh Kaavyadhaaraayen-	
33.	Ritikaaleen Vividh Kaavyadhaaraayen- Ritisiddha,	
34.	Ritikaaleen Vividh Kaavyadhaaraayen- Ritimukta	
35.	Ritimukta Kavya dhara Ki Visheshatayen	
36.	Ghananand Ka Parichaya	
37.	RitiSiddha Kavya dhara Ki Visheshatayen	
38.	Bihari Ka Parichaya	
39.	Tutorial / Discussion	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B.A. 1st Semester

Name of the Paper- Hindi Sahitya Ka Itihas: (Aadhunik Kaal), C-2

Units Assigned- Unit – 1 & Unit - 2

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Aadhunik Kaal – Naamkaran,	
3.	Aadhunik Kaaleen Prishthabhoomi – Rajnaitik,	
4.	Aadhunik Kaaleen Prishthabhoomi – Samajik, , Saanskritik,	
5.	Hindi Navjaagaran men Vividha Sansthaaon kaa Yogdaan,	
6.	Isayee Missionaries ka yogdan,	
7.	Thiyoshaphikal Society ka parichay,	
8.	Hindi Padya Sahitya kaa Vikas – Pramukha Kaviyon Parichay,	
9.	Unke Kaavyadhaaraaon kaa Saamaanya Parichay,	
10.	Bharatenduyug ki Visheshatayen,	
11.	Bharatenduyug ki Visheshatayen,	
12.	Bharatendu ka Parichaya,	
13.	Tutorial / Discussion	
14.	Dwiveedi Yug - Prishthbhoomi,	
15.	Dwiveedi Yug - Prishthbhoomi,	
16.	Dwiveedi Yug - Prishthbhoomi,	
17.	Dwiveedi Yug ki Visheshata,	
18.	Dwiveedi Yug ki Visheshata,	
19.	Sarswati Patrika	
20.	Mahavir Prasad Dwivedi ka Parichaya	
21.	Tutorial / Discussion	
22.	Chhayavaad ki Prishthabhoomi	
23.	Chhayavaad shabda ki vyuyupatti	
24.	Chhayavaad ki Visheshata,	
25.	Chhayavaad ki Visheshata,	
26.	Chhayavaad, Ke Stambha Kavi Jayshankar Prasad, Mahadevi Verma,	
27.	Chhayavaad Ke Stambha Kavi Niral and Pant, ,	
28.	Pragativaad ki Prishthabhoomi,	
29.	Pragativaad ki Prishthabhoomi,	
30.	Pragativaad ki Visheshata,	
31.	Pragativaad ki Visheshata,	
32.	Prayogvaad ki Prishthabhoomi,	
33.	Prayogvaad ki Visheshata,	
34.	Prayogvaad ki Visheshata,	
35.	Prayogvaad Aur Agyeya,	
36.	Tarsaptak,	
37	Nayee Kavita ki Parichaya,	
38.	Nayee Kavita ki Visheshta,	
39.	Nayee Kavita ki Visheshta,	
40.	Samkaaleen Kavita Parichaya	
41.	Samkaaleen Kavita Visheshata,	
42.	Samkaaleen Kavita Visheshata,	
43.	Tutorial / Discussion.	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B.A. 3rd Semester

Name of the Paper- Chhayaavaadottar Kavita (C-5)

Units Assigned- Unit – 3 & Unit - 4

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Sachchidanand Heeraanand Vaatsyaayan 'Agyeya'-	
3.	1. Baavara Aheri – Vyaakhyaa,	
4.	Baavara Aheri – Vyaakhyaa	
5.	2. Saanp ke Prati – Vyaakhyaa,	
6.	3 Hamaradesh - Vyaakhyaa	
7.	Kavyagat Visheshata	
8.	Bhawani Prasad Mishra-	
9.	1. Luhar Se-- Vyaakhyaa	
10.	2. Geet Farosh -- Vyaakhyaa	
11.	Geet Farosh -- Vyaakhyaa	
12	Kavyagat Visheshata	
13.	Tutorial / Discussion	
14.	Srweshwar Dayaal Saksena -	
15.	1. Suhagin ka Geet – Vyaakhyaa.	
16.	2. Vivashataa – Vyaakhyaa,	
17.	Kavyagat Visheshata	
18.	Tutorial / Discussion	
19.	Girija Kumar Mathur – Sahityik Parichay	
20.	1. Pandrah August – Vyaakhyaa,	
21.	Pandrah August – Vyaakhyaa,	
22.	2. Raat Hemant Kee – Vyaakhyaa,	
23.	Kavyagat Visheshata,	
24.	Tutorial / Discussion.	
25.	Overall Revision	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester - B.A. 3rd Semester

Name of the Paper - Bhaaratiya KaavyaShaastra (C-6)

Units Assigned - Unit -3 & Unit - 4

Marks Assigned - 20 + 20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Dhwani Siddhaant – Dhwani ki Awadhaarana,	
3.	Dhwani Siddhaant – Dhwani ki Paribhasha ,	
4.	Dhwani Siddhaant – Dhwani ki Pribhasha,	
5.	Dhwani ka Vargikaran.	
6.	Dhwani ka Vargikaran,	
7.	Dhwani ka Vargikaran,	
8.	Riti Siddhaant – Riti ki Awadhaarana,	
9.	Riti Siddhaant – Riti ki Awadhaarana	
10.	Riti Siddhaant – Vargikaran	
11.	Riti Siddhaant – Vargikaran	
12.	Riti aur Gun, Riti ke Bhed	
13.	Riti aur Gun, Riti ke Bhed	
14.	Tutorial / Discussion	
15.	Vakrokti Siddhaant – Vakrokti ki Awadhaarana,	
16.	Vakrokti Siddhaant – Vakrokti ki Awadhaarana,	
17.	Vakrokti Siddhaant – Vakrokti ki Awadhaarana,	
18.	Vakrokti ke Prakar,	
19.	Vakrokti ke Prakar,	
20.	Tutorial / Discussion	
21.	Auchitya Siddhant – Auchitya ki Awadhaarana,	
22.	Auchitya Siddhant – Auchitya ki Awadhaarana,	
23.	Auchitya Siddhant – Auchitya ki Awadhaarana,	
24.	Auchitya Siddhant - Prakar	
25.	Auchitya Siddhant – Prakar	
26.	Auchitya Siddhant - Prakar	
27.	Tutorial / Discussion	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester-B.A. 3rd Semester

Name of the Paper- Pashchaatya Kaavyashasttra ewam Naii Samiksha (C-7)

Units Assigned- Unit – 1 & Unit - 2

Marks Assigned- 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Pleto- Kavya Sambandhi Maanyataayen- Parichay	
3.	Pleto- Kavya Sambandhi Maanyataayen	
4.	Aadarshwaad	
5.	Aadarshwaad	
6.	Pratyayawaad	
7.	Pratyayawaad	
8.	Tutorial / Discussion.	
9.	Arastoo – Parichay	
10.	Arastoo – Parichay	
11.	Arastoo – AnuKriti Siddhant,	
12.	Arastoo – AnuKriti Siddhant,	
13.	Arastoo – Virechan Siddhant,	
14.	Arastoo – Virechan Siddhant,	
15.	Tutorial / Discussion.	
16.	Launjaainas – Kavya men Uddat ki Awadhaarana	
17.	Launjaainas – Kavya men Uddat ki Awadhaarana	
18.	Launjaainas – Kavya men Uddat ki Awadhaarana	
19.	Tutorial / Discussion	
20.	Wordsworth – Kavya Bhasha ka Siddhant	
21.	Wordsworth – Kavya Bhasha ka Siddhant	
22.	Wordsworth – Kavya Bhasha ka Siddhant	
23.	Wordsworth – Kavya Bhasha ka Siddhant	
24.	Tutorial / Discussion.	
25.	Kolrij – Kalpana aur fantasy	
26.	Kolrij – Kalpana aur fantasy	
27.	Kolrij – Kalpana aur fantasy	
28.	Kolrij – Kalpana aur fantasy	
29.	Tutorial / Discussion.	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B. A. 5th Semester

Name of the Paper- Hindi Naatak ewam Ekanki (C-11)

Units Assigned- Unit -1 & Unit - 2

Marks Assigned- 20 + 20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Andher Nagari – Bharatendu Harashchad.	
3.	Andher Nagari – Explanation,.	
4.	Andher Nagari – Explanation ,	
5.	Andher Nagari – Explanation ,	
6.	Andher Nagari – Explanation ,	
7.	Andher Nagari – Explanation,	
8.	Andher Nagari – Question & Answer	
9.	Andher Nagari Natyakala Kala ke tatwa ki Samiksha	
10.	Andher Nagari Natyakala Kala ke tatwa ki Samiksha	
11.	Andher Nagari ke Patron ka Charitra – Chitran	
12.	Andher Nagari ke Patron ka Charitra – Chitran	
13.	Andher Nagari – Vyaakhyaa,	
14.	Andher Nagari – Vyaakhyaa,	
15.	Andher Nagari – Vyaakhyaa,	
16.	Tutorial/Discussion.	
17.	Skandagupt – Explanation Jayshankar Prasad.	
18.	Skandagupt – Explanation	
19.	Skandagupt – Explanation	
20.	Skandagupt – Explanation,	
21.	Skandagupt – Explanation,	
22.	Skandagupt – Explanation,	
23.	Skandagupt – Explanation,	
24.	Skandagupt – Explanation,	
25.	Skandagupt – Explanation,	
26.	Skandagupt – Explanation,	
27.	Skandagupt – Explanation,	
28.	Skandagupt – Kala ke tatwa ke Samiksha,	
29.	Skandagupt Natak ke Patron ka Charitra – Chitran,	
30.	Skandagupt Natak ke Patron ka Charitra – Chitran,	
31.	Skandagupt Natak – Vyaakhyaa,	
32.	Skandagupt Natak – Vyaakhyaa,	
33.	Skandagupt Natak – Question & Answer,	
34.	Tutorial/Discussion.	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B. A. 5th Semester

Name of the Paper- Hindi Nibandha ewam Anya Gadya Vidhaayen (C-12)

Units Assigned- Unit -1 & Unit - 2

Marks Assigned- 20 + 20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Shivpoojan Sahay - Parichay,	
3.	Mahakavi Jayshankar Prasad- Explanation,	
4.	Mahakavi Jayshankar Prasad- Explanation,	
5.	Mahakavi Jayshankar Prasad- Question & Answer,	
6.	Mahakavi Jayshankar Prasad- Question & Answer,	
7.	Tutorial/Discussion.	
8.	Ramvriksha benipuri.	
9.	Rajiya – Explanation,	
10.	Rajiya – Explanation,	
11.	Rajiya – Explanation, - Parichay	
12.	Rajiya – Question & Answer,	
13.	Rajiya – Question & Answer,	
14.	Rajiya – Question & Answer,	
15.	Tutorial/Discussion.	
16.	Vishnukaant Shastri- Parichaya	
17.	Ye hai Professor Shashaank – Explanation,	
18.	Ye hai Professor Shashaank – Explanation,	
19.	Ye hai Professor Shashaank – Explanation,	
20.	Ye hai Professor Shashaank – Question & Answer,	
21.	Ye hai Professor Shashaank – Question & Answer,	
22.	Ye hai Professor Shashaank – Question & Answer,	
23.	Tutorial/Discussion.	
24.	Dr. Nagendra – parichay,	
25.	Dada Swargiya Baalkrishna Sharma ‘Naveen’ – Explanation,	
26.	Dada Swargiya Baalkrishna Sharma ‘Naveen’ – Explanation,	
27.	Dada Swargiya Baalkrishna Sharma ‘Naveen’ – Explanation,	
28.	Dada Swargiya Baalkrishna Sharma ‘Naveen’ – Question & Answer,	
29.	Dada Swargiya Baalkrishna Sharma ‘Naveen’ – Question & Answer,	
30.	Dada Swargiya Baalkrishna Sharma ‘Naveen’ – Question & Answer,	
31.	Tutorial/Discussion.	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B. A. 5th Semester

Name of the Paper- Asamiya Bhaasha ewam Sahitya (DSE-1)

Units Assigned- Unit -1 & Unit - 2

Marks Assigned- 20 + 20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Asamiya Kavya :	
3.	Shankardev : Parichay,	
4.	1. Man Meri Ram Charanhi Laagu,- Vyaakhya,	
5.	Man Meri Ram Charanhi Laagu,- Vyaakhya,	
6.	2. Narayan Kaahe Bhakati Karo Tera,- Vyaakhya,	
7.	Narayan Kaahe Bhakati Karo Tera,- Vyaakhya,	
8.	Maadhavdev : Parichay,	
9.	1- Tejare Kamalapati ,- Vyaakhya,	
10.	Tejare Kamalapati ,- Vyaakhya,	
11.	2. Gopal Gowali Paarate Nache ,- Vyaakhya,	
12.	Gopal Gowali Paarate Nache ,- Vyaakhya,	
13.	Vargeet : Shankardev Ewam Maadhavdev ki Vargeet ki Visheshataa,	
14.	Tutotial/ Discussion	
15.	Chandrakumar Agarawaalaa – Parichay,	
16.	1. Manav Vandana – Vyaakhya,	
17.	2. Tejimaala – Vyaakhya,	
18.	Tejimaala – Vyaakhya.	
19.	Tejimaala Lokkatha Asamiya lok jeewan ke kis Yathaarth ko Prastut..	
20.	Nalini Valadevi- Parichay.	
21.	Paramtrishna – Vyaakhya,	
22.	Paramtrishna – Vyaakhya,	
23.	Paramtrishna,	
24.	Paramtrishna,	
25.	2. Janambhoomi– Vyaakhya	
26.	Janambhoomi – Vyaakhya	
27.	Janambhoomi – Vyaakhya,	
28.	Janambhoomi -	
29.	Tutotial/ Discussion	
30.	Asamiya Kahani : Parichay,	
31.	Saiyad Abdul Malik –Parichay,	
32.	Maram Maram Lage – Kahani	
33.	Maram Maram Lage – Kahani	
34.	Maram Maram Lage – Kahani	
35.	Maram Maram Lage – Kahani Patra Yojana,	
36.	Maram Maram Lage – Kahani- Kala ke Tatwa ki Samiksha,	
37.	Maram Maram Lage – Kahani- Kala ke Tatwa ki Samiksha,	
38.	Maram Maram Lage – Kahani ki Vyaakhyaa	
39.	Maram Maram Lage – Kahani ki Vyaakhyaa	
40.	Tutotial/ Discussion	
41.	Gahawar – Bhawendra Nath Shaikia -Parichay.	
42.	Gahawar – Vishaleshan,	
43.	Gahawar – Vishaleshan,	
44.	Gahawar – Vishaleshan,	

45.	Gahawar – Question Answer,	
46.	Gahawar – Kala ke Tatwa ki Samiksha,	
47.	Gahawar – Kala ke Tatwa ki Samiksha,	
48.	Gahawar – Kahani Patra Yojana,	
49.	Gahawar –Kahani ki Vyaakhyaa,	
50.	Tutotial/ Discussion.	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B. A. 5th Semester

Name of the Paper- Chhayavaad (DSE- 2)

Units Assigned- Unit -1 & Unit - 4

Marks Assigned- 20 + 20

Class	Topic/ Unit	Remarks
1.	Chhayavaad- Saamaanya Parichaya, Visheshataayen, Chhayaavaad ke Stambha Chaaron Kaviyon ka Parichay,	
2.	Jayshankar Prasad ka Vyaktitv ewam Krititw,	
3.	Jayshankar Prasad ki Kavita – Himaandri tung Se –Vyaakhya,	
4.	Himaandri tung Se –Vyaakhya,	
5.	Beetee Vibhawari jag ree –Vyaakhya,	
6.	Beetee Vibhawari jag ree –Vyaakhya,	
7.	Mere Navik –Vyaakhya,	
8.	Saundarya –Vyaakhya,	
9.	Kaun Tum! Sansriti-Jalnidhi Teer –Vyaakhya,	
10.	Kaun Tum! Sansriti-Jalnidhi Teer –Vyaakhya,	
11.	Kaun Tum! Sansriti-Jalnidhi Teer –Vyaakhya,	
12.	Kaun Tum! Sansriti-Jalnidhi Teer –Vyaakhya,	
13.	Kaun Tum! Sansriti-Jalnidhi Teer –Vyaakhya,	
14.	Kaun Tum! Sansriti-Jalnidhi Teer –Vyaakhya,	
15.	Question & Answer	
16.	Tutorial/ Discussion.	
17.	Chhayaavaadi Kaviyon men Mahadevi ka Sthan -	
18.	Mahadevi Verma : Aadhunik Meera	
19.	Mahadevi ki Kavita –	
20.	Jeewan Virah ka Jaljaat –Vyaakhya,	
21.	Jeewan Virah ka Jaljaat –Vyaakhya,	
22.	Madhur-Madhur Mere Deepak Jal –Vyaakhya,	
23.	Madhur-Madhur Mere Deepak Jal –Vyaakhya,	
24.	Mai Neer Bharee Dukha ki Badali –Vyaakhya,	
25.	Mai Neer Bharee Dukha ki Badali –Vyaakhya,	
26.	Panth Hone Do Aparichit –Vyaakhya,	
27.	Panth Hone Do Aparichit –Vyaakhya,	
28.	Question & Answer	
29.	Tutorial/ Discussion.	

COURSE PLAN FOR SESSION JUNE-DECEMBER 2022

INSTRUCTOR: MISS ANINDITA MAHANTA

DEPARTMENT: MATHEMATICS

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Miss Anindita Mahanta

Course– B.Sc. Honours

Class/Semester- Semester I

Name of the Paper- C1. Calculus

Units Assigned- Practical

Marks Assigned- 20

Class	Topic/ Unit	Remarks
1.	Introduction to MATLAB, it's salient features, advantages, disadvantages with applications in different fields.	
2.	Basic structures and different MatLab windows: Command Window, Command History, Workspace, Current Directory, Help Browser, Start button.	
3.	Using MATLAB as a calculator: Creating MATLAB variables etc.	
4.	Tutorial I	
5.	MatLab built in functions and user defined functions.	
6.	Hierarchy of algebraic operations, evaluation of expressions.	
7.	Tutorial II	
8.	Controlling the appearance of floating-point number, format specification of integer. %f and %d format. Format long and short.	
9.	Some basic commands: like clc, clear all, close all, who, whos, hold on, bar3, clear, compass, pie, figure, subplot, plot, gridon, text, surf, surfc, meshgrid, mesh, meshc etc.	
10.	Plotting of graphs of function e^{ax+b}, $\log(ax+b)$, and to illustrate the effect of a and b on the graph. Plot of sin x and cos x graph in single plot command.	
11.	Plotting graphs of function $\frac{1}{(ax+b)}$, $\sin(ax+b)$, $\cos(ax+b)$, $\lvert ax+b \rvert$, and to illustrate the effect of a and b on the graph.	
12.	Plotting the graphs of polynomials of degree 4 and 5 etc.	
13.	Tutorial III	
14.	Plotting the graphs of the derivative graph, the second derivative graph and comparing them.	
15.	Sketching parametric curves (E.g. Trochoid, cycloid).	
16.	Sketching parametric curves (E.g. epicycloids, hypocycloid).	
17.	Obtaining surface of revolution of curves using surf, surfc command.	

18.	Tracing of conics in Cartesian coordinates.	
19.	Tutorial IV	
20.	Tracing of conics in polar coordinates. Derivative and integration of functions.	
21.	Sketching ellipsoid, hyperboloid of one and two sheets, elliptic cone using cartesian coordinates.	
22.	Sketching of elliptic paraboloid, hyperbolic paraboloid using cartesian coordinates. Solution of system of linear equations	
23.	Matrix input, addition, subtraction and multiplication of matrix.	
24.	Matrix inversion, transpose, determinant etc.	
25.	Tutorial V	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Miss Anindita Mahanta

Course– B.Sc. Generic

Class/Semester- Semester I

Name of the Paper- GE 1.1. Differential Calculus

Units Assigned- Unit II

Marks Assigned- 20

Class	Topic/ Unit	Remarks
1.	Analysis of function (increasing/decreasing and concavity)	
2.	Solved problems on concavity of functions.	
3.	Tutorial I	
4.	Introduction to tangent lines	
5.	Equation of tangent in different forms	
6.	Examples and Problems (Equation of tangent)	
7.	Introduction to normal lines	
8.	Equation of normal in different forms	
9.	Examples and Problems (Equation of normal)	
10.	Tutorial II	
11.	Introduction to tracing of curves in cartesian equation	
12.	Curve tracing in Cartesian equation (Procedure and Examples) I	
13.	Curve tracing in Cartesian equation (Procedure and Examples) II	
14.	Tutorial III	
15.	Parametric representations of curves and its tracing.	
16.	Examples of Parametric curve tracing I	
17.	Examples of Parametric curve tracing II	
18.	Tutorial IV	
19.	Introduction to polar coordinate systems and procedure to trace its curve.	
20.	Curve tracing in Polar coordinate system (Examples) I	
21.	Curve tracing in Polar coordinate system (Examples) II	
22.	Tutorial III	
23.	Asymptotes and procedure to find asymptotes.	
24.	Solved problems on Asymptotes	
25.	Singular points and it's types.	
26.	Problems on Singular Points	
27.	Tutorial IV	

28.	Introduction to Curvature and radius of curvature with solved problems.	
29.	Tutorial V	
30.	Revision	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Miss Anindita Mahanta

Course– B.Sc. Generic

Class/Semester- Semester III

Name of the Paper- GE 3.1. Real Analysis

Units Assigned- Unit II

Marks Assigned- 20

Class	Topics/ Unit	Remarks
1.	Real sequence with examples	
2.	Bounded sequence and examples	
3.	Theorems on bounded sequence with examples	
4.	Tutorial I	
5.	Limit of a sequence	
6.	Limit theorems with proof	
7.	Solved problems on limit theorems	
8.	Convergent sequence with examples	
9.	Tutorial II	
10.	Monotone sequence with examples	
11.	Monotone convergence theorem (Statement Only) with Examples.	
12.	Tutorial III	
13.	Cauchy sequence with Examples	
14.	Cauchy convergence criterion with examples	
15.	Cauchy's theorems on limits with solved problems	
16.	Tutorial IV	
17.	Order preservation theorem with Examples	
18.	Squeeze theorem with Examples	
19.	Tutorial V	
20.	Revision	

COURSE PLAN FOR SESSION JUNE-DECEMBER 2022

INSTRUCTOR: DR. ARJUN SINGH CHETRY

DEPARTMENT: MATHEMATICS

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Arjun Singh Chetry

Course– B.Sc. Honours

Class/Semester- Semester I

Name of the Paper- C2. Algebra

Units Assigned- Unit 1 & Unit 2(shared)

Marks Assigned- 35

Class	Topic/ Unit	Remarks
1.	Overview of the Course and the Paper (Algebra)	
2.	Complex numbers and its geometric interpretation revisited	
3.	Polar representation of complex numbers-I	
4.	Polar representation of complex numbers-II (Euler form)	
5.	Powers of complex numbers	
6.	Tutorial-I	
7.	De Moivre's theorem for rational indices (with Proof)	
8.	Application of De Moivre's theorem (n-th roots of unity)	
9.	Application of De Moivre's theorem (simplifying trigonometric identities)	
10.	Application of De Moivre's theorem (solving polynomials)	
11.	Tutorial-II	
12.	Relations (Equivalence relations)	
13.	Examples of equivalence relations	
14.	Functions (in context with relations)	
15.	Different types of functions (one-one, onto)	
16.	Tutorial-III	
17.	Composition of functions	
18.	Invertible functions	
19.	Examples & Theorems (Results)	
20.	Tutorial-IV	
21.	One to one correspondence and cardinality of a set	
22.	Cardinality of certain standard sets	
23.	Well Ordering Property of positive integers and Division Algorithm	
24.	Application of Division Algorithm (Examples)	
25.	Tutorial-V	
26.	Divisibility Properties	
27.	Theorems on Divisibility of integers	
28.	Euclidean Algorithm	

29.	Examples and Problems	
30.	GCD and LCM	
31.	Congruence relations between integers	
32.	Properties of congruences	
33.	Tutorial-V	
34.	Principles of Mathematical Induction	
35.	Examples and Problems	
36.	Fundamental theorem of Arithmetic and a glimpse into Number Theory.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Arjun Singh Chetry

Course– B.Sc. Honours

Class/Semester- Semester III

Name of the Paper- C5. Theory of Real functions

Units Assigned- Unit 1,2 &3(all units)

Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Limits of functions	
2.	Sequential criterion for limits	
3.	Divergence criteria	
4.	Examples and Problems	
5.	Limit theorems-I	
6.	Limit theorems-II	
7.	Limit theorems-III	
8.	One sided limit	
9.	Examples and Problems	
10.	Infinite limits and limits at infinity-I	
11.	Infinite limits and limits at infinity-II	
12.	Tutorial-I	
13.	Continuous functions: Definition and Examples	
14.	Sequential criterion for continuity and discontinuity	
15.	Standard theorems	
16.	Algebra of continuous functions-I	
17.	Algebra of continuous functions-II	
18.	Continuous functions on an interval-I	
19.	Continuous functions on an interval-II	
20.	Tutorial-II	
21.	Intermediate value theorem	
22.	Location of roots theorem	
23.	Examples and Problems	
24.	Preservation of intervals theorem	
25.	Standard theorems	
26.	Tutorial-III	
27.	Uniform continuity	
28.	Non-uniform continuity criteria	
29.	Uniform continuity theorem	
30.	Tutorial-IV	
31.	Differentiability of a function at a point: Definition and examples	

32.	Differentiability of a function at an interval	
33.	Standard theorems	
34.	Caratheodory's theorem	
35.	Algebra of differentiable functions-I	
36.	Algebra of differentiable functions-II	
37.	Relative extrema	
38.	Interior extremum theorem	
39.	Tutorial-V	
40.	Rolle's theorem	
41.	Mean value theorem	
42.	Intermediate value property of derivatives	
43.	Darboux's theorem	
44.	Examples and Problems	
45.	Applications of mean value theorem to inequalities-I	
46.	Applications of mean value theorem to inequalities-II	
47.	Approximation of polynomials-I	
48.	Approximation of polynomials-II	
49.	Examples and Problems	
50.	Tutorial-VI	
51.	Taylor's theorem to inequalities-I	
52.	Taylor's theorem to inequalities-II	
53.	Taylor's theorem to inequalities-III	
54.	Cauchy's mean value theorem-I	
55.	Cauchy's mean value theorem-II	
56.	Taylor's theorem with Lagrange's form of remainder-I	
57.	Taylor's theorem with Lagrange's form of remainder-II	
58.	Examples and Problems	
59.	Taylor's theorem with Cauchy's form of remainder-I	
60.	Taylor's theorem with Cauchy's form of remainder-II	
61.	Examples and Problems	
62.	application of Taylor's theorem to convex functions-I	
63.	application of Taylor's theorem to convex functions-II	
64.	relative extrema-I	
65.	relative extrema-II	
66.	Tutorial-VII	
67.	Taylor's series and Maclaurin's series expansions of exponential and trigonometric functions-I	
68.	Taylor's series and Maclaurin's series expansions of exponential and trigonometric functions-II	
69.	Taylor's series and Maclaurin's series expansions of exponential and trigonometric functions-III	
70.	Problems	
71.	Tutorial-VIII	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Arjun Singh Chetry

Course– B.Sc. Honours

Class/Semester- Semester V

Name of the Paper- DSE 2 Number Theory

Units Assigned- Unit 1, 2 & 3(All units)

Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Overview of the Course and the Paper (Number Theory)	
2.	Revision of Divisibility Results (from C2. Algebra)	
3.	Linear Diophantine equation I	
4.	Linear Diophantine equation II	
5.	Tutorial-I	
6.	Prime counting function and Statement of Prime Number Theorem	
7.	History of Number theory (with emphasis to Prime numbers)	
8.	Goldbach conjecture	
9.	Linear Congruences-I	
10.	Linear Congruence-II and complete set of residues	
11.	Examples and Problems	
12.	Chinese Remainder theorem with Examples	
13.	Fermat's Little Theorem with standard results	
14.	Tutorial-II	
15.	Wilson's theorem	
16.	Number theoretic functions with examples	
17.	Sum and number of divisors	
18.	Totally multiplicative functions	
19.	Dirichlet Product: Definition and Properties	
20.	The Mobius Inversion formula	
21.	Standard theorems on the mobius inversion formula	
22.	The greatest integer function with examples	
23.	Euler's phi-function	
24.	Tutorial-III	
25.	Euler's theorem with examples	
26.	Application of Euler's theorem	
27.	Reduced set of residues: Definition and Examples	

28.	Properties of the Euler's phi function-I	
29.	Properties of the Euler's phi function-II	
30.	Order of an integer modulo n (with insight to Group theory)-I	
31.	Order of an integer modulo n (with insight to Group theory)-II	
32.	Primitive roots for primes (with insight to generators of Groups)	
33.	Standard theorems on composite numbers with primitive roots-I	
34.	Standard theorems on composite numbers with primitive roots-II	
35.	Tutorial-IV	
35.	Euler's Criterion	
36.	Standard theorem on Euler's Criterion-I	
37.	Standard theorem on Euler's Criterion-II	
38.	The Legendre symbol	
39.	The Legendre symbol and its properties-I	
40.	The Legendre symbol and its properties-II	
41.	The Legendre symbol and its properties-III	
42.	Quadratic reciprocity-I	
43.	Quadratic reciprocity-II	
44.	Tutorial-V	
45.	Quadratic congruences-I	
46.	Quadratic congruences-II	
47.	Problems	
48.	Quadratic congruences with composite moduli	
49.	Examples and Problems	
50.	The equation $x^2 + y^2 = z^2$	
51.	Standard theorems	
52.	Fermat's last theorem	
53.	Standard theorems	
54.	Public key encryption	
55.	RSA encryption and decryption	

COURSE PLAN FOR SESSION JUNE-DECEMBER 2022

TEACHER: **DR. BINOD CHETRY**

DEPARTMENT: **MATHEMATICS**

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Binod Chetry**

Course–B.Sc. Honours

Class/Semester- Semester I

Name of the Paper-GE-1.1 Differential Calculus

Units Assigned- Unit 2& Unit 3(shared)

Marks Assigned-40

Class	Topic/ Unit	Remarks
1.	Tangents and Normals-I	
2.	Tangents and Normals-II	
3.	Curvature	
4.	Asymptotes	
5.	Singular points	
6.	Tutorial-I	
7.	Tracing of curves	
8.	Parametric representation of curves and tracing of parametric curves-I	
9.	Parametric representation of curves and tracing of parametric curves-II	
10.	Polar coordinates and tracing of curves in polar coordinates	
11.	Tutorial-II	
12.	Taylor's series	
13.	Maclaurin's series of sin x, cos x	
14.	Maclaurin's series of $e^x, \log(1+x), (1+x)^m$	
15.	Maxima and Minima	
16.	Indeterminate forms	
17.	Tutorial-II	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Binod Chetry**

Course– B.Sc. Honours

Class/Semester- Semester III

Name of the Paper- GE-3.1 Real Analysis

Units Assigned- Unit 2 & Unit 3

Marks Assigned- 40

Class	Topic/ Unit	Remarks
1.	Real Sequences: Definition and Examples	
2.	Bounded Sequence: Definition and Examples	
3.	Cauchy convergence criterion for sequences	
4.	Examples and Problems	
5.	Cauchy s theorem on limits	
6.	Order preservation and squeeze theorem	
7.	Monotone sequences and their convergence	
8.	Tutorial-I	
9.	Infinite series: Definition and Examples	
10.	Cauchy convergence criterion for series	
11.	positive term series, geometric series, comparison test	
12.	Examples and Problems	
13.	convergence of p-series	
14.	Root test, Ratio test, alternating series, Leibnitz s test	
15.	Examples and Problems-I	
16.	Examples and Problems-II	
17.	Definition and examples of absolute and conditional convergence	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Binod Chetry**

Course– B.Sc. Honours

Class/Semester- Semester V

Name of the Paper- C11 Multivariate Calculus

Units Assigned- Unit 1,2,3 & 4(all units)

Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Functions of several variables	
2.	Limit and continuity of functions of two variables-i	
3.	Limit and continuity of functions of two variables-ii	
4.	Partial differentiation	
5.	Total differentiability and differentiability	
6.	Sufficient condition for differentiability	
7.	Tutorial-I	
8.	Chain rule for one and two independent parameters	
9.	Examples and problems	
10.	Directional derivatives-i	
11.	Directional derivatives-ii	
12.	The gradient	
13.	Maximal and normal property of the gradient	
14.	Tangent planes	
15.	Examples and problems	
16.	Tutorial-II	
17.	Extrema of functions of two variables-i	
18.	Extrema of functions of two variables-ii	
19.	Examples and problems	
20.	Method of lagrange multipliers-i	
21.	Method of lagrange multipliers-ii	
22.	Examples and problems	
23.	Constrained optimization problems-i	
24.	Constrained optimization problems-ii	
25.	Examples and problems	
26.	Tutorial-III	
27.	Definition of vector field (with examples)	
28.	Divergence and curl-I	
29.	Divergence and curl-II	
30.	Examples and Problems	
31.	Double integration over rectangular region	
32.	Examples and Problems	
33.	Double integration over non-rectangular region	
34.	Examples and Problems	
35.	Double integrals in polar co-ordinates	
36.	Examples and Problems	
37.	Triple integrals	

38.	Triple integral over a parallelepiped and solid regions	
39.	Examples and Problems	
40.	Tutorial IV	
41.	Volume by triple integrals-I	
42.	Volume by triple integrals-II	
43.	Examples and Problems	
44.	Cylindrical coordinates	
45.	Spherical coordinates	
46.	Tutorial-V	
47.	Change of variables in double integrals	
48.	Change of variables in triple integrals	
49.	Examples and Problems	
50.	Line integrals: Definition and Examples	
51.	Applications of line integrals-I	
52.	Applications of line integrals-II	
53.	Fundamental theorem for line integrals-I	
54.	Fundamental theorem for line integrals-II	
55.	Problems	
56.	Tutorial-VI	
57.	Conservative vector fields	
58.	Independence of path	
59.	Green's theorem-I	
60.	Green's theorem-II	
61.	Green's theorem-III	
62.	Surface integrals-I	
63.	Surface integrals-II	
64.	Examples and Problems	
65.	Integrals over parametrically defined surfaces-I	
66.	Integrals over parametrically defined surfaces-II	
67.	Tutorial-VII	
68.	Stoke's theorem-I	
69.	Stoke's theorem-II	
70.	The Divergence theorem-I	
71.	The Divergence theorem-II	
72.	Examples and Problems	

DIGBOI COLLEGE, DIGBOI

Course Plan

June – December (Odd Semester) 2022

Name of the Teacher: **Dr. Bishwajit Saikia**

Course: **Generic**

Class/Semester: **1st Semester**

Name of the Paper: **GE-101 (Section B)**

Units Assigned: **IV**

Marks Assigned: **10**

Class	Topic	Remarks
Unit IV: Stereochemistry		
1.	Conformation of ethane	
2.	Conformation of butane	
3.	Conformation of cyclohexane	
4.	Interconversion of wedge to Newmann projection	
5.	Interconversion of Newmannto Sawhorse and Fischer projection	
6.	Geometrical and optical isomerism	
7.	Enantiomerism and diastereoisomerism	
8.	Threo and Erythro and Cis and Trans isomerism	
9.	CIP rule for R/S nomenclature	
10.	CIP rule for E/Z nomenclature	

DIGBOI COLLEGE, DIGBOI

Course Plan

June – December (Odd Semester) 2022

Name of the Teacher: **Dr. Bishwajit Saikia**
Course: **Honours**
Class/Semester: **3rdSemester**
Name of the Paper: **C-302**
Units Assigned: **I + III + V**
Marks Assigned: **14 + 14 + 4**

Class	Topic	Remarks
Unit I: Chemistry of Halogenated hydrocarbons		
1.	Hunsdiecker reaction	
2.	SN1 reactions and their mechanisms	
3.	SN2 reactions and their mechanisms	
4.	SNi reactions and their mechanism	
5.	Nucleophilic substitution vs elimination reaction	
6.	Preparation of alkyl halide from diazonium salt	
7.	Nucleophilic aromatic substitution	
8.	Benzyne mechanism	
9.	Relative reactivity of alkyl, aryl, benzyl and vinyl halides towards nucleophilic substitution reaction	
10.	Organometallic compounds of Mg	
11.	Organometallic compounds of Li	
Unit III: Carbonyl compounds		
1.	Nucleophilic addition and elimination reactions	
2.	Mechanisms of aldol and benzoin condensation	
3.	Mechanisms of Knoevenagel condensation,Claisen-Schmidt and Perkin reactions	
4.	Mechanism of Cannizaro, Wittig and Beckmann reactions	
5.	Mechanism of Benzil-Benzilic acid rearrangements, haloform reaction and Baeyer Villiger oxidation	
6.	α-substitution reactions	
7.	Oxidations and reductions (Clemmensen, Wolff-Kishner	
8.	$LiAlH_4$, $NaBH_4$, MPV	
9.	PDC , PCC , SeO_2	
10.	$Pb(OAc)_4$& HIO_4	
11.	Addition reactions of unsaturated carbonyl compounds: Michael addition	
12.	Unsaturated Aldehydes (Acrolein, Crotonaldehyde, Cinnamaldehyde)	
13.	Unsaturated Ketone (MVK)	
14.	Active methylene compounds: Keto-enoltautomerism	

15.	Preparation and synthetic applications of diethyl malonate	
16.	Preparation and synthetic applications of ethyl acetoacetate	
Unit III: Sulphur containing compounds		
1.	Preparation and reactions of thiols	
2.	Preparation and reactions of thioethers	
3.	Preparation and reactions of sulphonic acids	

DIGBOI COLLEGE, DIGBOI

Course Plan

June – December (Odd Semester) 2022

Name of the Teacher: **Dr. Bishwajit Saikia**
Course: **Generic**
Class/Semester: **3rdSemester**
Name of the Paper: **GE-301 (Section B: Organic Chemistry)**
Units Assigned: **V + VI**
Marks Assigned: **6 + 6**

Class	Topic	Remarks
Unit V: Carboxylic acids and their derivatives		
1.	Preparation of carboxylic acids (aliphatic and aromatic)	
2.	Acidic and Alkaline hydrolysis of esters	
3.	Hell – Vohlard - Zelinsky Reaction	
4.	Preparation of Carboxylic acid derivatives (aliphatic)	
5.	Acid chlorides, anhydrides, Estersand their interconversion	
6.	Amides from acids and their interconversion	
7.	Comparative study of nucleophilicity of acyl derivatives	
8.	Reformatsky Reaction, Perkin Condensation	
Unit VI: Amines and Diazonium Salts		
1.	Gabriel's Phthalimide synthesis	
2.	Hofmann Bromamide reaction, Schotten – Baumann Reaction	
3.	Hofmann vs. Saytzeff elimination, Carbylamine test, Hinsberg test, with HNO_2	
4.	Electrophilic substitution (case aniline): nitration, bromination, sulphonation	
5.	Diazonium salts: Preparation: from aromatic amines	
6.	Reactions: conversion to benzene, phenol, dyes	

DIGBOI COLLEGE, DIGBOI

Course Plan

June – December (Odd Semester) 2022

Name of the Teacher: **Dr. Bishwajit Saikia**
Course: **Honours**
Class/Semester: **5thSemester**
Name of the Paper: **C-501**
Units Assigned: **I + V + VI**
Marks Assigned: **8 + 10 + 10**

Class	Topic	Remarks
Unit I: Nucleic Acids		
1.	Components of nucleic acids, Nucleosides and nucleotides	
2.	Structure, synthesis and reactions of: Adenine, Guanine	
3.	Structure, synthesis and reactions of: Cytosine, Uracil and Thymine	
4.	Structure of polynucleotides	
5.	Structure of DNA (Watson & Model) and RNA	
6.	Genetic Code Biological role of DNA and RNA	
7.	Replication,Transcription	
8.	Translation	
Unit V: Disconnection approach in Organic Synthesis		
1.	Elementary idea about disconnection,	
2.	Synthon and Synthetic equivalent	
3.	Functionall group interconversion (FGI)	
4.	Functional group addition (FGA)	
5.	Simple examples of retrosynthesis of C-C bond formation by using Corey House reaction	
6.	Simple examples of retrosynthesis of C-C bond formation by using Grignard reaction	
7.	Simple examples of retrosynthesis of C-C bond formation by using aldol condensation	
8.	Retrosynthesis of monofunctionalised compounds	
	Retrosynthesis of Bi-functionalized compounds	
Unit VI: Pharmaceutical Compounds: Structure and Importance		
1.	Classification, structure and therapeutic uses of antipyretics: Paracetamol and its synthesis	
2.	Analgesics: Ibuprofen (with synthesis), Antimalarials	
3.	Ranitidine, Providone-Iodine Solution	
4.	Synthesis and mode of action of Suphanilamides and other Sulphadrugs (sulphapyridine, sulphathiazole)	
5.	Chloroquine (with synthesis)	

DIGBOI COLLEGE, DIGBOI
Deptt. of Assamese
COURSE PLAN- 2022
June - December (Odd Semester)

Name of the Teacher : Deepa Sarmah Borthakur
Course : Honours
Semester : 1st Semester
Name of the Paper : History of Assamese Literature (C-1)
Unit Assigned : 2
Marks Assigned : 16

Class	Topic / Unit : 2	Remarks
1.	Introduction of Assamese folk literature	
2.	Folk literature and Assamese folk songs	
3.	Classification of Assamese folk songs	
4.	Assamese 'Anusthanmulak geet'	
5.	Bihu geet, Bangeet, Biyanaam etc.	
6.	Spiritual songs	
7.	Work - songs	
8.	Ballad	
9.	Baromahi geet & Juna	
10.	Pratna Assamese literature	
11.	Charyapada	
12.	Similarity between langauage of Charyapada & Assamese	
13.	'Sunya Purana' and Assamese language	
14.	Revision	
15.	Class Test	

DIGBOI COLLEGE, DIGBOI
Deptt. of Assamese
COURSE PLAN- 2022
June - December (Odd Semester)

Name of the Teacher : Deepa Sarmah Borthakur
Course : Honours
Semester : B.A. 3rd Semester
Name of the Paper : Selection from Assamese Poetry (C-6)

Unit Assigned : 2
Marks Assigned : 14

Class	Topic / Unit : 2	Remarks
	Assamese folk poetry	
1.	Assamese folk poetry	
2	About Ajan Phokir, the writer of 'Jikir'	
3	Summary of the Jikir	
4.	Assamese translation from the Text 'Jikir'	
5.	Word meaning of the Jikir	
6	Significance of the 'Jikir'	
7.	Similarity between 'Borgeet' & 'Jikir'	
8.	Similarity between 'Dehbisarar Geet' and 'Jikir'	
9.	Description about Ballad	
10.	The historical background of the Naharar Malita	
11.	Summary of the Naharar Malita	
12	Sumbolic meaning of the Malita	
13	The historical character 'Nahor'	
14	Revision	
15	Class Test	

DIGBOI COLLEGE, DIGBOI

COURSE PLAN- 2022-2023

June - December (Odd Semester)

Deptt. of Assamese

Name of the Teacher : Deepa Sarmah Borthakur
Course : Honours
Semester : B.A. 3rd Semester
Name of the Paper : Studies on the Culture of Assam (C-7)
(ভাষা সংস্কৃতি অধ্যয়ন)
Unit Assigned : 1 & 3
Marks Assigned : 16 &18

Class	Topic / Unit : 1	Remarks
1.	Definition of Culture	
2.	Classification of Culture	
3.	The characteristics of Culture	
4.	The Elements of Culture	
5.	Relation between Society and Culture	
6.	Relation between Religion & Culture	
7.	Civilization and Culture	
8.	Culture and Person	
9.	Culture and Language	
10.	Revision	
11.	Class Test	

Class	Topic / Unit : 3	Remarks
1.	Folk customs of different tribes in Assam	
2.	Brief description of 'Sonowal-Kachari' Tribe	
3.	Folk customs of Sonowal-Kachari-Birth related customs	
4.	Marriage related customs of Sonowal Kachari	
5.	Death related customs	
6.	Festivals and folk customs of Sonowal Kachari	
7.	Folk belief of Sonowal-Kachari tribe	
8.	Food related belief	
9.	Introduction about 'Mishing' tribe of Assam	
10.	Folk customs of Mishing Tribe	
11.	Birth related customs	
12.	Marriage related customs	
13.	Death related customs	
14.	Festivals related customs	
15.	Folk belief of Mishing Tribe	
16.	Food related belief	
17.	Revision	
18.	Class Test	

DIGBOI COLLEGE, DIGBOI

COURSE PLAN- 2022

June - December (Odd Semester)

Deptt. of Assamese

Name of the Teacher : Deepa Sarmah Borthakur
Course : Honours
Semester : B.A. 5th Semester
Name of the Paper : Assamese Drama (C-11)
Unit Assigned : 2 & 3
Marks Assigned : 16, 24,

Class	Topic / Unit : 2	Remarks
1.	Introduction of Sri Sri Sankardev	
2.	Ankiya Naat of Sankardev	
3.	Characteristics of Ankiya Naat	
4.	Summary of 'Rukmini Haran Naat'	
5.	Sloka and Bhatima in 'Rukmini Haran Naat'	
6.	Rasa of 'Rukmini Haran Naat'	
7.	Language of 'Rukmini Haran'	
8.	Similarity between 'Rukmini Haran' and 'Ram Bijoy"	
9.	The Characters of 'Rukmini Haran'	
10.	Revision	
11.	Class Test	

Class	Topic / Unit : 3; Drama-I	Remarks
1.	Introduction	
2.	Padma Nath Gohain Barua and his literary achievement	
3.	Summary of the Drama 'Gaon Burha'	
4.	The 'Gaon Burha' as a Social Drama	
5.	Why 'Gaon Burha' is not a tragedy Drama	
6.	Comedy elements in the Drama	
7.	The Social Scenario in 'Gaon Burha'	
8.	The motive of the Drama	
9.	The characters of the Drama	
10.	The Dialogue of the Drama	
11.	Revision	
12.	Class Test	

Class	Topic / Unit : 3; Drama-II	Remarks
1.	Jyotiprasad Agarwala and his literary achievement	
2.	The background of the Drama 'Labhita'	
3.	Subject matter of the Drama	
4.	The characters of the Drama	
5.	The heroin of the Drama 'Labhita'	
6.	The Dialogue of the Drama	
7.	The Social scenario of the Drama	
8.	Chapterwise discussion	
9.	The characteristics of Jyotiprasad's Drama	
10.	The songs of Drama 'Labhita'	
11.	Revision	
12.	Class Test	

COURSE PLAN

Name of the Teacher: DR. DEEP KUMAR KURI

Department of Physics

Period: January-June 2022

1) Paper: Electricity and Magnetism (PHYSICS – C III) - B.Sc. 2nd Semester (H)

Unit	Class	Topic	Remarks
Unit 3 Magnetic Field	1	Magnetic force between current elements and definition of Magnetic Field **B**	
	2	Biot-Savart's Law and its simple applications: straight wire and circular loop	
	3	Current Loop as a Magnetic Dipole and its Dipole Moment	
	4	Ampere's Circuital Law and its application to (1) Solenoid and (2) Toroid.	
	5	Properties of **B**: curl and divergence.	
	6	Vector Potential	
	7	Magnetic Force on (1) point charge (2) current carrying wire	
	8	Magnetic Force between current elements	
	9	Torque on a current loop in a uniform Magnetic, Field	
Unit 4	1	Magnetization vector (**M**). Magnetic Intensity (**H**).	

Magnetic Properties of Matter	2	Magnetic Susceptibility and permeability	
	3	Relation between **B, H, M**	
	4	Ferromagnetism. B-H curve and hysteresis	
Unit 5 Electromagnetic Induction	1	Faraday's Law. Lenz's Law.	
	2	Self-Inductance and Mutual Inductance	
	3	Reciprocity Theorem	
	4	Energy stored in a Magnetic Field.	
	5	Introduction to Maxwell's Equations	
	6	Charge Conservation and Displacement current.	

2) Paper: Elements of Modern Physics (PHYSICS – C IX) - B.Sc. 4th Semester (H)

Unit	Class	Topic	Remarks
Unit 1	1	Planck's constant and light as a collection of photons	
	2	Blackbody Radiation: Quantum theory of Light	
	3	Photo-electric effect	
	4	Photo-electric effect (continued)	
	5	Compton scattering	
	6	Compton scattering (continued)	
	7	De Broglie wavelength and matter waves	
	8	Davisson-Germer experiment	
	9	Wave description of particles by wave packets	

	10	Wave description of particles by wave Packets (continued)	
	11	Group and Phase velocities and relation between them	
	12	Two-Slit experiment with electrons	
	13	Wave amplitude and wave functions	
	14	Probability	
Unit 2	1	Position measurement- gamma ray microscope thought experiment	
	2	Wave-particle duality, Heisenberg uncertainty principle	
	3	Derivation from Wave Packets impossibility of a particle following a trajectory	
	4	Estimating minimum energy of a confined particle using uncertainty principle	
	5	Energy-time uncertainty principle application to virtual particles and range of an interaction.	
Unit 3	1	Two slit interference experiment with photons, atoms and particles	
	2	linear superposition principle as a consequence	
	3	Matter waves and wave amplitude	
	4	Schrodinger equation for non-relativistic particles	
	5	Momentum and Energy operators	
	6	stationary states	
	7	physical interpretation of a wave	

		function	
	8	probabilities and normalization	
	9	Probability and probability current densities in one dimension	
	10	Probability and probability current densities in one dimension (continued)	
Unit 4	1	One dimensional infinitely rigid box	
	2	Energy eigen values and eigen functions	
	3	Normalization	
	4	Quantum dot	
	5	Quantum mechanical scattering in one dimension-across a step potential	
	6	Tunneling in one dimension-across a step potential	
	7	Quantum mechanical scattering in one dimension- across a rectangular potential barrier	
	8	Quantum mechanical scattering in one dimension- across a rectangular potential barrier (continued)	
	9	Tunneling in one dimension- across a rectangular potential barrier	
	10	Tunneling in one dimension- across a rectangular potential barrier (continued)	
Unit 5	1	Size and structure of atomic nucleus and its relation with atomic weight	
	2	Impossibility of an electron being in the nucleus as a consequence of the	

		uncertainty principle	
	3	Nature of nuclear force	
	4	NZ graph	
	5	Liquid Drop model: semi-empirical mass formula and binding energy	
	6	Nuclear Shell Model and magic numbers	
Unit 6	1	Radioactivity	
	2	stability of the nucleus	
	3	Law of radioactive decay	
	4	Mean life and half-life	
	5	Alpha decay, Beta decay- energy released	
	6	spectrum and Pauli's prediction of neutrino, Gamma ray emission	
	7	Energy-momentum conservation: electron-positron pair creation by gamma photons in the vicinity of a nucleus	
	8	Energy-momentum conservation: electron-positron pair creation by gamma photons in the vicinity of a nucleus (continued)	
Unit 7	1	Fission and fusion- mass deficit, relativity and generation of energy; Fission - nature of fragments and emission of neutrons.	
	2	Nuclear reactor: slow neutrons interacting with Uranium 235	
	3	Fusion and thermonuclear reactions	

		driving stellar energy	
Unit 8	1	Einstein's A and B coefficients, Metastable states	
	2	Spontaneous and Stimulated emissions	
	3	Optical Pumping and Population Inversion	
	4	Three-Level and Four-Level Lasers, Ruby Laser and He-Ne Laser. Basic lasing.	

3) Paper: Electromagnetic Theory (PHYSICS – C XIII) – B.Sc. 6th Semester (M)

Unit	Class	Topic	Remarks
Unit – 1 Maxwell Equations	1	Review of Maxwell's equations	
	2	Displacement Current	
	3	Vector and Scalar Potentials	
	4	Gauge Transformations: Lorentz and Coulomb Gauge	
	5	Boundary Conditions at Interface between Different Media	
	6	Boundary Conditions at Interface between Different Media contd…	
	7	Wave Equations	
	8	Plane Waves in Dielectric Media	
	9	Poynting Theorem and Poynting Vector	
	10	Poynting Theorem and Poynting Vector contd…	
	11	Electromagnetic (EM) Energy Density	
	12	Physical Concept of Electromagnetic Field Energy Density, Momentum	

		Density and Angular Momentum Density	
Unit – 2 EM Wave Propagation in Unbounded Media	1	Plane EM waves through vacuum and isotropic dielectric medium	
	2	Plane EM waves through vacuum and isotropic dielectric medium contd…	
	3	Transverse nature of plane EM waves, refractive index and dielectric constant, wave impedance	
	4	Transverse nature of plane EM waves, refractive index and dielectric constant, wave impedance contd…	
	5	Propagation through conducting media, relaxation time, skin depth	
	6	Wave propagation through dilute plasma	
	7	electrical conductivity of ionized gases, plasma frequency, refractive index, skin depth	
	8	electrical conductivity of ionized gases, plasma frequency, refractive index, skin depth contd…	
	9	application to propagation through ionosphere	
	10	application to propagation through ionosphere contd…	
Unit 3 EM Wave in Bounded Media	1	Boundary conditions at a plane interface between two media	
	2	Reflection & Refraction of plane waves at plane interface between two	

		dielectric media-Laws of Reflection & Refraction	
	3	Reflection & Refraction of plane waves at plane interface between two dielectric media-Laws of Reflection & Refraction contd…	
	4	Fresnel's Formulae for perpendicular & parallel polarization cases	
	5	Brewster's law	
	6	Reflection & Transmission coefficients	
	7	Reflection & Transmission coefficients contd…	
	8	Total internal reflection	
	9	evanescent waves	
	10	Metallic reflection (normal Incidence)	
Unit 4 Polarization of Electromagnetic Waves	1	Description of Linear	
	2	Circular and Elliptical Polarization	
	3	Propagation of E.M. Waves in Anisotropic Media	
	4	Symmetric Nature of Dielectric Tensor, Fresnel’s Formula	
	5	Uniaxial and Biaxial Crystals	
	6	Light Propagation in Uniaxial Crystal, Double Refraction	
	7	Polarization by Double Refraction	
	8	Nicol Prism, Ordinary & extraordinary refractive indices	
	9	Production & detection of Plane, Circularly and Elliptically Polarized Light	
	10	Phase Retardation Plates: Quarter-	

		Wave and Half-Wave Plates	
	11	Babinet Compensator and its Uses	
	12	Analysis of Polarized Light	
	13	Optical Rotation, Biot's Laws for Rotatory Polarization	
	14	Fresnel's Theory of optical rotation, Calculation of angle of rotation	
	15	Experimental verification of Fresnel's theory	
	16	Specific rotation	
	17	Laurent's half-shade polarimeter	
Unit 4 Wave Guides	1	Planar optical wave guides	
	2	Planar dielectric wave guide	
	3	Condition of continuity at interface	
	4	Phase shift on total reflection	
	5	Eigenvalue equations	
	6	Phase and group velocity of guided waves	
	7	Phase and group velocity of guided waves contd…	
	8	Field energy and power transmission	
Unit 5 Optical Fibres	1	Numerical aperture	
	2	Step and Graded Indices	
	3	Single and Multimode fibres	

4) Paper: Electricity and Magnetism (PHYSICS-GE-2) – B.Sc. 2nd Semester

Unit	Class	Topic	Remarks
Unit 3 Magnetism	1	Biot-Savart's law and its applications- straight conductor	
	2	circular coil	

	3	Solenoid carrying current	
	4	Divergence and curl of magnetic field	
	5	Magnetic vector potential	
	6	Ampere's circuital law	
	7	Magnetic properties of materials: Magnetic intensity	
	8	magnetic induction	
	9	permeability, magnetic susceptibility.	
	10	Brief introduction of dia-, para-and ferro-magnetic materials	
Unit 4 Electromagnetic Induction	1	Faraday's laws of electromagnetic induction	
	2	Lenz's law	
	3	self and mutual inductance	
	4	L of single coil	
	5	M of two coils	
	6	Energy stored in magnetic field	
Unit 5 Maxwell`s equations and Electromagnetic wave propagation	1	Equation of continuity of current	
	2	Displacement current	
	3	Maxwell's equations	
	4	Poynting vector	
	5	energy density in electromagnetic field	
	6	electromagnetic wave propagation through vacuum	
	7	electromagnetic wave propagation through isotropic dielectric medium	
	8	electromagnetic wave propagation through isotropic dielectric medium contd…	

	9	transverse nature of EM waves	
	10	polarization	

5) Paper: Classical Mechanics (PH-C-IV) – M.Sc. 2nd Semester

Unit	Class	Topic	Remarks
Unit 1	1	Review of Newtonian mechanics, Mechanics of a system of particles	
	2	Constraints of motion and their classification, Generalised co-ordinates	
	3	D' Alembert's principle, Lagrange's equations of motion	
	4	Hamilton's principle, Symmetries and conservation theorems	
	5	Cyclic coordinates. Flows in phase space	
	6	solvable vs integrable, equilibria and linear stability theory	
	7	Bifurcations in Hamiltonian systems	
	8	Bifurcations in Hamiltonian systems (continued)	
Unit 2	1	Motion in a central potential	
	2	Maps	
	3	winding numbers and orbital stability	
	4	Hidden symmetry in the Kepler problem	
	5	Small Oscillations	
	6	Solution of one-dimensional harmonic oscillator problem	
	7	Forced oscillations in one dimension	

	8	Damped harmonic motion in one dimension general solution of the problem	
	9	Displacement as a function of time	
	10	Systems with many degrees of freedom	
	11	Eigen value equation and normal co-ordinates	
	12	Integrable and chaotic oscillations	
	13	Return maps	
	14	Area preserving maps	
	15	Deterministic chaos	
Unit 5	1	Noncanonical flows, flows on spheres	
	2	Local vs complete integrability	
	3	Globally integrable noncanonical flows	
	4	Attractors	
	5	Damped driven Euler-Lagrange dynamics	
	6	Liapunov exponents, Geometry and integrability	
	7	Damped driven Newtonian systems, period doubling	
	8	Fractal and multifractal orbits in phase space	
	9	Strange attractors	
	10	The two frequency problem	

6) Paper: Atomic and Molecular Physics (PH-C-XII) - M.Sc. 4th Semester

Unit	Class	Topic	Remarks

Unit 1 Atomic Spectroscopy	1	Fine structure of hydrogen atom	
	2	relativistic correction	
	3	Lamb shift	
	4	Spectra of alkali atoms	
	5	spinorbit interaction and fine structure in alkali atoms	
	6	spinorbit interaction and fine structure in alkali atoms contd…	
	7	spinorbit interaction and fine structure in alkali atoms contd…	
	8	level scheme of two electron atoms-equivalent and nonequivalent electrons	
	9	ground and excited states of two electron atoms	
	10	interaction energy in L-S and j-j coupling for two electrons	
	11	interaction energy in L-S and j-j coupling for two electrons contd…	
	12	interaction energy in L-S and j-j coupling for two electrons contd…	
	13	Zeeman effect	
	14	Zeeman effect contd…	
	15	Paschen-Back effect	
	16	Stark effect	
	17	hyperfine structure of hydrogen and alkali atoms	
	18	hyperfine structure of hydrogen and alkali atoms contd…	
	19	hyperfine structure of hydrogen and alkali atoms contd…	

	20	spectra of multi electron atoms	
	21	X-ray spectra	
	22	width and shape of spectral lines	
	23	width and shape of spectral lines contd…	
Unit 2 Molecular Spectroscopy	1	Regions of the spectrum	
	2	types of molecules	
	3	Rotational Spectra for rigid and non rigid rotators	
	4	isotopic effect in rotational spectra	
	5	intensity of spectral lines	
	6	information derived from rotational spectra	
	7	microwave spectrometer	
	8	Vibrational spectra for anharmonic oscillator	
	9	vibration-rotation spectra	
	10	Infra-red spectrometer	
	11	Electronic spectra of molecules-BornOppenheimer approximation	
	12	vibrational analysis of electronic band spectra	
	13	vibrational analysis of electronic band spectra contd…	
	14	fine structure of electronic band spectra	
	15	fine structure of electronic band spectra contd…	
	16	Fortrat Diagram	
	17	Raman spectra	

	18	Raman spectrometer	
	19	Photoelectron spectroscopy	
	20	Spin resonance spectroscopy- NMR	
	21	ESR	
	22	Mössbauer spectroscopy	
	23	Mössbauer spectroscopy contd..	
	24	Fourier Transform Spectroscopy	
	25	Fourier Transform Spectroscopy contd..	
Unit 3 Laser Spectroscopy	1	Fundamentals of Lasers-properties	
	2	basic elements	
	3	threshold condition	
	4	rate equation	
	5	population inversion	
	6	Laser resonator and modes	
	7	types of laser- solid state laser	
	8	gas laser	
	9	Semi conductor laser	
	10	applications of laser spectroscopy	
	11	Laser Cooling	
	12	Ammonia Masers-two level and three level	

Period: July-December 2022

1) Paper: Thermal Physics (PHYSICS - C VI) - B.Sc. 3rd Semester (H)

Unit	Class	Topic	Remarks
Unit 1 Zeroth and First Law of Thermodynamics	1	Extensive and intensive Thermodynamic Variables, Thermodynamic Equilibrium	
	2	Zeroth Law of Thermodynamics & Concept of Temperature, Concept of Work & Heat	
	3	State Functions, First Law of Thermodynamics and its differential form	
	4	Internal Energy	
	5	First Law & various processes	
	6	General Relation between CP and CV	
	7	Work Done during Isothermal and Adiabatic Processes	
	8	Compressibility and Expansion Coefficient	
Unit 2 Second Law of Thermodynamics	1	Reversible and Irreversible process with examples	
	2	Conversion of Work into Heat and Heat into Work	
	3	Heat Engines	
	4	Carnot's Cycle	
	5	Carnot engine & efficiency	
	6	Refrigerator & coefficient of performance	
	7	2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and	

		their Equivalence	
	8	2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence (continued)	
	9	Carnot's Theorem	
	10	Applications of Second Law of Thermodynamics: Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale	
Unit 3 Entropy	1	Concept of Entropy, Clausius Theorem, Clausius Inequality	
	2	Second Law of Thermodynamics in terms of Entropy, Entropy of a perfect gas	
	3	Principle of Increase of Entropy	
	4	Entropy Changes in Reversible and Irreversible processes with examples, Entropy of the Universe	
	5	Principle of Increase of Entropy	
	6	Temperature–Entropy diagrams for Carnot's Cycle	
	7	Third Law of Thermodynamics. Unattainability of Absolute Zero	
Unit 4 Thermodynamic Potentials	1	Thermodynamic Potentials: Internal Energy, Enthalpy	
	2	Helmholtz Free Energy, Gibb's Free Energy	
	3	Surface Films and Variation of Surface Tension with Temperature	
	4	Magnetic Work	
	5	Cooling due to adiabatic demagnetization	
	6	First and second order Phase Transitions with examples	
	7	Clausius Clapeyron Equation and Ehrenfest equations	
Unit 5 Maxwell's	1	Derivations and applications of Maxwell's Relations	
	2	Clausius Clapeyron equation	
	3	Values of Cp-Cv	

Thermodynamic Relations	4	TdS Equations	
	5	Joule-Kelvin coefficient for Ideal and Van der Waal Gases	
	6	Energy equations	
	7	Change of Temperature during Adiabatic Process	
Unit 6 Kinetic Theory of Gases Distribution of Velocities	1	Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas and its Experimental Verification	
	2	Doppler Broadening of Spectral Lines and Stern's Experiment	
	3	Mean Speed	
	4	RMS and Most Probable Speeds	
	5	Degrees of Freedom	
	6	Law of Equipartition of Energy	
	7	Specific heats of Gases	
Unit 7 Molecular Collisions	1	Mean Free Path, Collision Probability, Estimates of Mean Free Path	
	2	Viscosity, Thermal Conductivity	
	3	Diffusion	
	4	Brownian Motion and its Significance	
Unit 8 Real Gases	1	Behavior of Real Gases: Deviations from the Ideal Gas Equation	
	2	The Virial Equation. Andrew's Experiments on CO2 Gas.	
	3	Critical Constants	
	4	Continuity of Liquid and Gaseous State, Vapour and Gas	
	5	Boyle Temperature	
	6	Van der Waal's Equation of State for Real Gases	
	7	Values of Critical Constants. Law of Corresponding States. Comparison with Experimental Curves	
	8	P-V Diagrams. Joule's Experiment. Free Adiabatic Expansion of a Perfect Gas.	
	9	Joule-Thomson Porous Plug Experiment. Joule- Thomson Effect for Real and Van der Waal Gases.	

	10	Temperature of Inversion. Joule- Thomson Cooling	

2) Paper: Quantum Mechanics & Applications (PHYSICS – C XI) - B.Sc. 5th Semester (H)

Unit	Class	Topic	Remarks
Unit 1 Time dependent Schrodinger equation	1	Time dependent Schrodinger equation and dynamical evolution of a quantum state; Properties of Wave Function.	
	2	Interpretation of Wave Function Probability and probability current densities in three dimensions; Conditions for Physical Acceptability of Wave Functions.	
	3	Normalization. Linearity and Superposition Principles.	
	4	Eigenvalues and Eigenfunctions. Position, momentum and Energy operators	
	5	commutator of position and momentum operators; Expectation values of position and momentum.	
	6	Wave Function of a Free Particle.	
Unit 2 Time independent Schrodinger equation	1	Hamiltonian, stationary states and energy eigenvalues	
	2	expansion of an arbitrary wavefunction as a linear combination of energy eigenfunctions	
	3	General solution of the time dependent Schrodinger equation in terms of linear combinations of stationary	

		states	
	4	Application to spread of Gaussian wavepacket for a free particle in one dimension	
	5	Application to spread of Gaussian wavepacket for a free particle in one dimension (continued)	
	6	Wave packets	
	7	Fourier transforms and momentum space wavefunction	
	8	Fourier transforms and momentum space wavefunction (continued)	
	9	Position-momentum uncertainty principle	
	10	Position-momentum uncertainty principle (continued)	
Unit 3 General discussion of bound states in an arbitrary potential	1	Continuity of wave function	
	2	Boundary condition	
	3	Emergence of discrete energy levels	
	4	Application to one-dimensional problem-square well potential	
	5	Quantum mechanics of simple harmonic oscillator	
	6	Quantum mechanics of simple harmonic oscillator (continued)	
	7	Energy levels and energy eigen functions using Frobenius method	
	8	Energy levels and energy eigen functions using Frobenius method (continued)	

	9	Hermite polynomials	
	10	Hermite polynomials (continued)	
	11	ground state	
	12	zero point energy & uncertainty principle	
Unit 4 Quantum theory of hydrogen-like atoms	1	Time independent Schrodinger equation in spherical polar coordinates	
	2	Separation of variables for second order partial differential equation	
	3	Separation of variables for second order partial differential equation (continued)	
	4	Angular momentum operator & quantum numbers	
	5	Radial wave functions from Frobenius method	
	6	Radial wave functions from Frobenius method (continued)	
	7	Radial wave functions from Frobenius method (continued)	
	8	Shapes of the probability densities for ground & first excited states	
	9	Orbital angular momentum quantum numbers l and m	
	10	s, p, d... shells	
Unit 5 Atoms in Electric & Magnetic Fields	1	Electron angular momentum	
	2	Space quantization	
	3	Electron Spin and Spin Angular Momentum	
	4	Larmor’s Theorem	
	5	Spin Magnetic Moment	

	6	Stern-Gerlach Experiment	
	7	Zeeman Effect: Electron Magnetic Moment and Magnetic Energy	
	8	Gyromagnetic Ratio and Bohr Magneton	
Unit 6 Atoms in External Magnetic Fields	1	Normal Zeeman Effect	
	2	Anomalous Zeeman Effect	
	3	Paschen Back Effect	
	4	Stark Effect	
Unit 7 Many electron atoms	1	Pauli's Exclusion Principle	
	2	Symmetric & Antisymmetric Wave Functions, Periodic table	
	3	Fine structure	
	4	Spin orbit coupling	
	5	Spectral Notations for Atomic States	
	6	Total angular momentum	
	7	Vector Model	
	8	Spin-orbit coupling in atoms-L-S and J-J couplings	
	9	Hund's Rule	
	10	Term symbols, Spectra of Hydrogen and Alkali atoms (Na etc.)	

3) Paper: Thermal Physics and Statistical Mechanics (PHYSICS – GE - 3) - B.Sc. 3rd Semester (G)

Unit	Class	Topic	Remarks
Unit 1 Laws of Thermnodynamics	1	Zeroth Law of thermodynamics and temperature	
	2	First law and internal energy	
	3	First law and internal energy	

		(continued)	
	4	Conversion of heat into work	
	5	Various Thermodynamical Processes	
	6	Various Thermodynamical Processes (continued)	
	7	Applications of First Law: General Relation between CP and CV	
	8	Applications of First Law: General Relation between CP and CV (continued)	
	9	Work Done during Isothermal and Adiabatic Processes	
	10	Work Done during Isothermal and Adiabatic Processes (continued)	
	11	Compressibility and Expansion Coefficient	
	12	Compressibility and Expansion Coefficient (continued)	
	13	Reversible and irreversible processes	
	14	Second law and Entropy	
	15	Second law and Entropy (continued)	
	16	Carnot's cycle & theorem	
	17	Carnot's cycle & theorem (continued)	
	18	Entropy changes in reversible processes	
	19	Entropy changes in irreversible processes	
	20	Entropy-temperature diagrams	
	21	Third law of thermodynamics	
	22	Unattainability of absolute zero	

Unit 3 Kinetic Theory of Gases	1	Derivation of Maxwell's law of distribution of velocities and its experimental verification	
	2	Mean free path (Zeroth Order)	
	3	Transport Phenomena: Viscosity	
	4	Transport Phenomena: Viscosity (continued)	
	5	Conduction	
	6	Diffusion (for vertical case)	
	7	Diffusion (for vertical case) (continued)	
	8	Law of equipartition of energy	
	9	Applications to specific heat of gases	
	10	Monoatomic and diatomic gases.	
Unit 5 Statistical Mechanics	1	Phase space	
	2	Macrostate and Microstate	
	3	Entropy and Thermodynamic probability	
	4	Maxwell Boltzmann law - distribution of velocity	
	5	Maxwell Boltzmann law - distribution of velocity (continued)	
	6	Quantum statistics	
	7	Fermi-Dirac distribution law	
	8	Fermi-Dirac distribution law (continued)	
	9	Electron gas	
	10	Bose-Einstein distribution law	
	11	Photon gas	
	12	Comparison of three statistics	

4) Paper: Quantum Mechanics-I (PH-C-III) - M.Sc. 1st Semester

Unit	Class	Topic	Remarks
Unit 1 Fundamental Concepts	1	Overview of wave mechanics	
	2	Schrödinger equation	
	3	application to some important physical problems: particle in a box	
	4	simple harmonic oscillator	
	5	simple harmonic oscillator contd…	
	6	delta function potential	
	7	delta function potential contd..	
	8	spherical well potential	
	9	spherical well potential contd…	
	10	hydrogen atom	
	11	hydrogen atom contd..	
	12	Kets, Bras and Operators	
	13	Kets, Bras and Operators contd…	
	14	Base Kets and Matrix Representations	
	15	Base Kets and Matrix Representations contd…	
	16	Base Kets and Matrix Representations contd…	
	17	Measurements	
	18	Observables and Uncertainty Relations	
	19	Observables and Uncertainty Relations contd…	
	20	Generalized uncertainty principle	
	21	Change of basis	
	22	Change of basis contd…	
	23	Wave functions in Position and	

		Momentum Space	
	24	Wave functions in Position and Momentum Space contd…	
	25	Wave functions in Position and Momentum Space contd…	
Unit 2 Quantum Dynamics	1	Schrödinger picture	
	2	Heisenberg picture	
	3	Time evolution and the Schrödinger equation	
	4	Heisenberg equation	
	5	time evolution of the simple harmonic oscillator	
	6	Symmetries	
	7	Conservation laws and Degeneracy	
	8	Conservation laws and Degeneracy contd…	
	9	Spatial and Time translation	
	10	Parity	
	11	Time reversal	
	12	Density operators	
	13	Density operators contd…	
	14	Pure versus Mixed Ensembles	
	15	Pure versus Mixed Ensembles contd…	
Unit 3 Angular Momentum	1	Rotation	
	2	Angular Momentum and Unitary groups	
	3	commutation relations	
	4	Eigenvalues and Eigenstates of Angular Momentum	
	5	Ladder operators and their matrix	

		representations	
	6	Ladder operators and their matrix representations contd…	
	7	the Stern Gerlach Experiment	
	8	Spin angular momentum and Pauli matrices	
	9	Addition of Angular momentum	
	10	Clebcsh Gordon Coefficients	
	11	Clebcsh Gordon Coefficients contd…	
	12	Clebcsh Gordon Coefficients contd…	
	13	Identical particles	
	14	Many particle systems	
	15	Symmetric and anti-symmetric wave functions	
	16	Slater's determinant	
	17	Pauli's exclusion principle	
	18	Wigner-Eckart theorem	
	19	Spherical tensors	
	20	Spherical tensors contd…	

5) Paper: Electrodynamics (PH-C-VIII) - M.Sc. 3rd Semester

Unit	Class	Topic	Remarks
Unit 1	1	Propagation of electromagnetic waves in different media	
	2	Dispersion	
	3	Frequency dependence of σ, μ and ε	
	4	Frequency dependence of σ, μ and ε (continued)	Tutorial
	5	Dispersion in non-conductors	
	6	Dispersion in non-conductors	Tutorial

		(continued)	
	7	Anomalous dispersion	Tutorial
	8	Free electrons in conductors and plasma	
	9	Wave Guides	
	10	TE waves in rectangular wave guide	
	11	TE waves in rectangular wave guide (continued)	Tutorial
	12	Coaxial transmission lines	
	13	Boundary value problems in spherical coordinate	
Unit 2	1	Electromagnetic radiation: Retarded potentials	
	2	Electromagnetic radiation: Retarded potentials (continued)	Tutorial
	3	Electric dipole radiation	
	4	Electric dipole radiation (continued)	Tutorial
	5	Radiation from an arbitrary distribution of charges and current	
	6	Radiation from an arbitrary distribution of charges and current (continued)	Tutorial
	7	Lienard-Wiechert potentials	
	8	Lienard-Wiechert potentials (continued)	Tutorial
	9	Fields due to uniformly moving charge	
	10	Fields due to uniformly moving charge (continued)	Tutorial
	11	Fields due to accelerated charge	

	12	Fields due to accelerated charge (continued)	Tutorial
	13	Linear and circular acceleration	
	14	Linear and circular acceleration (continued)	Tutorial
	15	Angular distribution of radiated power	
	16	Angular distribution of radiated power (continued)	Tutorial
	17	Bremhstrahlung and Synchrotron radiation	
	18	Bremhstrahlung and Synchrotron radiation (continued)	Tutorial
	19	Radiation reaction	
	20	Radiation reaction (continued)	
	21	Abraham-Lorentz formula	
	22	Abraham-Lorentz formula (continued)	Tutorial
Unit 3	1	Structure of space-time	
	2	Structure of space-time (continued)	
	3	Structure of space-time (continued)	Tutorial
	4	Four vectors and Lorentz transformation	
	5	Four vectors and Lorentz transformation (continued)	Tutorial
	6	Four vectors and Lorentz transformation (continued)	
	7	Proper time and velocity	
	8	Proper time and velocity (continued)	Tutorial
	9	Relativistic energy and momentum	
	10	Relativistic energy and momentum (continued)	

	11	Relativistic energy and momentum (continued)	Tutorial
	12	Magnetism as relativistic phenomena	
	13	Magnetism as relativistic phenomena (continued)	Tutorial
	14	Potential formulation of relativistic electrodynamics	
	15	Potential formulation of relativistic electrodynamics (continued)	Tutorial
	16	Potential formulation of relativistic electrodynamics (continued)	Tutorial
	17	Electromagnetic field tensor	
	18	Electromagnetic field tensor (continued)	Tutorial
	19	Electromagnetic field tensor (continued)	
	20	Dual tensor	
	21	Dual tensor (continued)	Tutorial
	22	Dual tensor (continued)	
	23	Covariant formulation of electrodynamics	
	24	Covariant formulation of electrodynamics (continued)	Tutorial
	25	Covariant formulation of electrodynamics (continued)	

COURSE PLAN

June 2022 to December 2022

Name of teacher: Dr. Dimpy Das

Course: B. Sc. (CBCS)

Semester: 1st Semester (Honours)

Name of Paper: BC102T; Biomolecules and Cell Biology

Units Assigned: 3 (unit 1, 2,3)

Marks Assigned: 27

Class	Topic/Unit	Remarks
20	Unit 1: Biomolecules Types and significance of chemical bonds; structure and properties of water, pH and buffers Carbohydrates: nomenclature and classification; monosaccharides; disaccharides; oligosaccharides and polysaccharides. Lipids: Definition and major classes of storage and structural lipids; fatty acids structure and functions; essential fatty acids, triacyl glycerols structure, functions and properties, phosphoglycerides. Proteins: structure of amino acids; levels of protein structure- Primary, secondary, tertiary and quarternary; protein denaturation and biological roles of proteins. Nucleic acids: structure of nitrogenous bases; structure and function of nucleotides, types of nucleic acids, structure of A,B,Z types of DNA; types of RNA; structure of tRNA.	1. Explanation by chalk and talk method, 2. PPT classes 3. Will provide study materials. 4. Students seminar
4	Unit 2: Bioenergetics Laws of thermodynamics, concept of free energy, endergonic and exergonic reactions, coupled reactions, redox reactions, ATP structure, its role as a energy currency molecule.	
6	Unit 3: Enzymes Structure of enzymes, holoenzymes, apoenzymes, cofactors, coenzymes and prosthetic group. Classification of enzymes; features of active site, substrate specificity, mechanism of action (activation energy, look and key hypothesis, induced-fit theory), Michaelis – Menten equation, enzyme inhibition and factors affecting enzyme activity.	

Semester: 1st Semester (Generic)
Name of Paper: BG101T; Biodiversity
Units Assigned: 2 (Unit 6,7)
Marks Assigned: 15

Class	Topics/Unit	Remarks
10	Unit 6: Bryophytes General characteristics, adaptations to land habit, classification, range of thallus organization. Classification (up to family), morphology, anatomy and reproduction of Marchantia and Funaria. Ecological and economic importance of bryophytes with special mention of Sphagnum.	1. Explanation by chalk and talk method, 2. Will provide study materials. Students seminar
8	Unit 7: Pteridophytes General characteristics, classification, Early land plants (Cooksonia and Rhynia). Classification (up to family), morphology, anatomy and reproduction of Selaginella, Equisetum and Pteris. Heterospory and seed habit, stelar evolution. Ecological and economical importance of Pteridophytes.	

Semester: 3rd Semester (Honours)
Name of Paper: BC306T; Economic Botany
Units Assigned: Whole paper
Marks Assigned: 53

Class	Topic/Unit	Remarks
6	Unit 1: Origin of cultivated plants Concept of centres of origin, their importance with reference to Vavilov's work. Indigenous Knowledge System (IKS). Examples of major plant introductions; crop domestication and loss of genetic diversity; evolution of new crops/varieties, importance of germplasm diversity.	1. Explanation by chalk and talk method, 2. PPT classes 3. Will provide study materials. 4. Students seminar
6	Unit 2: Cereals Wheat and rice (origin, morphology, processing and uses); brief account of wheat	
6	Unit 3: Legumes Origin, morphology and uses of chick pea, pigeon pea and fodder legumes. Importance to man and ecosystem.	
4	Unit 4: Sources of sugars and starches Morphology and processing of sugarcane, products and by-products of sugarcane industry. Potato – morphology, propagation and uses.	
6	Unit 5: Spices Listing of important spices, their family and part used. Economic importance with special reference to fennel, saffron, clove, cinnamommum, cardamom and black pepper.	
4	Unit 6: Beverages Tea, Coffee (morphology, processing and uses)	
8	Unit 7: Sources of oils and fats General description, classification, extraction, their uses and health implications groundnut, coconut, linseed, soybean, mustard and coconut (Botanical name, family and uses). Essential oils: general account, extraction methods, comparison with fatty oils and their uses.	
3	Unit 8: Natural rubber Para rubber; tapping, processing and uses.	
8	Unit 9: Drug-yielding plants Therapeutic and habit forming drugs with special reference to *Cinchona, Rawolfia, Andrographis, Aloe vera* and *Phyllanthus* (Morphology, processing, uses and health hazards).	
3	Unit 10: Timber plants General account with special reference to teak, sal, pine and sisu.	
3	Unit 11: Fibres Classification based on the origin of fibres; cotton, coir and jute (morphology, extraction and uses)	
4	Unit 12: Aromatics and petrocrops General account and special reference to Aquilaria, Cymbopogon, Vetiveria, Jetropa, Ricinus, Pogostemon.	

Semester: 3rd Semester (Generic)
Name of Paper: BG303T; Plant anatomy and embryology
Units Assigned: 2 (Unit 6 and 7)
Marks Assigned: 10

Class	Topic/Unit	Remarks
8	Unit 6: Pollination and fertilization Pollination mechanisms and adaptations, double fertilization; seed structure appendages and dispersal mechanisms	1. Explanation by chalk and talk method, 2. PPT classes 3. Will provide study materials.
8	Unit 7: Embryo and endosperm Endosperm types, structure and functions; dicot and monocot embryo; embryo-endosperm relationship.	

Semester: 5th Semester (Honours)
Name of Paper: BD503T; Research Methodology
Units Assigned: Whole Paper
Marks Assigned: 53

Class	Topic/Unit	Remarks
10	**Unit 1: Basic concepts of research** Research definition and types of research (Descriptive vs analytical; applied vs fundamental; quantitative vs qualitative; conceptual vs emperical). Research methods vs methodology. Literature review and its consolidation; Library research; field research; laboratory research.	1. Explanation by chalk and talk method, 2. PPT classes 3. Will provide study materials. 4. Guest lecture 5. Students seminar
6	**Unit 2: General laboratory practices** Common calculations in botany laboratories. Understanding the details on the label of reagent bottles. Molarity and normality of common acids and bases. Preparation of solutions. Dilutions. Percentage solutions. Molar, molal and normal solutions. Technique of handling micropipettes; knowledge about common toxic chemicals and safety measures in their handling.	
3	**Unit 3: Data collection and documentation of observations** Maintaining a laboratory record; tabulation an generation of graphs. Imaging of tissue specimens and application of scale bars. The art of field photography.	
5	**Unit 4: Overview of biological problems** History; key biology research areas, Model organisms in biology (A brief overview): genetics, physiology, biochemistry, molecular biology, cell biology, genomics, proteomics – transcriptional regulatory network.	
6	**Unit 5: Methods to study plant cell/ tissue structure** Whole mounts, peel mounts, squash preparations, clearing, maceration and sectioning; tissue preparation: living vs fixed, physical vs chemical fixation, coagulating fixatives, non-coagulant fixatives; tissue dehydration using graded solvent series; paraffin and plastic infiltration; preparation of thin and ultrathin sections.	
5	**Unit 6: Plant microtechniques** Staining procedures, classification and chemistry of stains. Staining equipment. Reactive dyes and fluorochromes (including genetically engineered protein labelling with GFP and other tags). Cytogenetic techniques with squashed plant materials.	
6	**Unit 7: The art of scientific writing and its presentation** Numbers, units, abbreviations and nomenclature used in scientific writing. Writing references. Powerpoint presentation. Poster presentation. Scientific writing and ethics. Introduction to copyright- academic misconduct/ plagiarism.	

Course: M. Sc.

Semester: 1st Semester
Name of Paper: LSC102; Cell biology and genetics
Units Assigned: Genetics (Section-B: Unit 4, 5 and 6)
Marks Assigned: 30

Class	Topic/Unit	Remarks
16	**Unit 4:** Deviations of Mendelism, pleiotropy, penetrance and expressivity, phenocopy, multiple alleles and multiple genes; chromosomal mechanism of sex determination, sex-linked, sex limited and sex influenced characters; cytoplasmic inheritance, linkage and crossing over: phase, group, mechanism and stages of occurrence of crossing over; gene mapping in eukaryotes, three-point test cross. Epigenetics: concepts and molecular basis.	1. Explanation by chalk and talk method, 2. PPT classes 3. Will provide study materials.
10	**Unit5:** Mutation: numerical and structural chromosomal mutation, autoploidy and alloploidy, spontaneous and induced mutation: mutagens and their action, gene mutation, frame shift and substitutional mutation, DNA damage and repairing.	
7	**Unit 6:** Concept of population genetics and Hardy – Weinberg law, Human genetics: genetic disorders and syndromes, euthenics, eugenics and euphenics; Genetic counselling: Basic idea on human genome project (HGP), genomic library and gene targeting.	

Semester: 3rd Semester
Name of Paper: LSC303; Pteridophytes and Gymnosperms
Units Assigned: Whole paper
Marks Assigned: 75

Class	Topic/Unit	Remarks
8	Unit 1: Paleobotany**:** Fossils & the process of fossilization, Study of (a) *Rhynia, Lepidodendron, Sphenophyllum.* (b). *Calymatotheca, Cycadeoidea and Cordaites.*	1. Explanation by chalk and talk method, 2. PPT classes 3. Will provide study materials. 4. Students seminar
18	Unit 2: Systematic study: Structure, Reproduction and Affinities of (a). *Lycopsida, Sphenopsida, Filicopsida* (b). *Cycadales, Ginkgoales, Coniferales, Gnetales, Ephedrales*	
1	Unit 3: Diversity and Economic Importance: Classifications, Diversity and Distribution of Gymnosperms in India with special reference to N.E.India.	
2	Unit 4: Economic Importance: Economic Importance of Pteridophytes & Gymnosperms	

DIGBOI COLLEGE, DIGBOI

Course Plan (Odd Semester)

Name of the Teacher- Dulu Moni Das

COURSE PLAN: 2022-23

DEPARTMENT: BOTANY

Course –Honours/Generic:Honours
Class/Semester- 1st semester (H)
Paper code:-BC101T
Name of the Paper- Microbiology & Phycology
Units Assigned- 1, 2, 3, 4
Marks Assigned- 33

Class	Topic/ Unit	Remarks
1.	Introduction to virus & discovery of virus.	Explanations
2.	Physiochemical & biological Character of virus.	Explanations
3.	Classification of virus.	Explanations
4.	Replication in virus, Lytic cycle.	Explanations
5.	Lysogenic cycle & TMV.	Explanations
6.	Viroids & Prions.	Explanations
7.	Economic importance of virus with reference to vaccine production.	Notes
8.	Role of virus in research & medicine diseases diagnosis.	Notes
9.	Discovery of bacteria & history of bacteriology.	Explanations
10.	Classification of bacteria.	Explanations
11.	Cell structure & Cell wall of bacteria.	Explanations
12.	Nutrition & growth of bacteria.	Explanations
13.	Economic importance of bacteria with reference to role in agriculture.	Notes
14.	Economic importance of bacteria with reference to role in industry medicine.	Notes
15.	General characters, ecology & distribution of Algae.	Explanations
16.	Cell structure of Algae.	Explanations
17.	Pigmentation, reserved food material & flagellation in algae.	Explanations
18.	Range of thallus structure in Algae.	Notes
19.	Classification in Algae.	Explanations
20.	Classification in Algae.	Explanations
21.	Classification in Algae.	Explanations
22.	Role of Algae in environment.	Notes
23.	Role of Algae in agriculture.	Notes
24.	Role of Algae in biotechnology.	Notes
25.	Role of Algae in industry.	Notes

DIGBOI COLLEGE, DIGBOI

Course Plan (Odd Semester)

Name of the Teacher- Dulu Moni Das

Course –Honours / Generic – Honours

Class/Semester- 1st semester (H)

Paper Code: BC101P.

Name of the Paper- Microbiology & Phycology

Units Assigned- Practical

Marks Assigned- 24

Class	Topic/ Unit	Remarks
1.	Study about Photograph of T- Phage virus & TMV.	Practical
2.	Line drawing of Lytic & Lysogenic cycle.	Practical
3.	Study about Permanent slides of binary fission, endospore & conjugation in bacteria.	Practical
4.	Study about nodule bacteria by gram stain method.	Practical
5.	Study about nodule bacteria by gram stain method.	Practical

DIGBOI COLLEGE, DIGBOI

Course Plan (Odd Semesters)

Name of the Teacher- Dulu Moni Das

Course –Honours / Generic – Generic
Class/Semester- 1st semester (G)
Paper code:-BNC101T
Name of the Paper- Biodiversity
Units Assigned- 1, 3.
Marks Assigned- 15

Class	Topic/ Unit	Remarks
1.	History, General account on virus.	Explanations
2.	Living & non living characters of virus.	Notes
3.	Replication of virus.	Explanations
4.	Lytic & Lysogenic cycle in virus.	Explanations
5.	Discovery, history and general account on Bacteria.	Explanations
6.	Reproduction in bacteria.	Explanations
7.	Vegetative & asexual reproduction in bacteria.	Explanations
8.	Sexual reproduction in bacteria.	Explanations
9.	Economic importance of bacteria.	Explanations
10.	General characters on fungi.	Explanations
11.	Ecology & significance of fungi.	Explanations
12.	Range of thallus organization in fungi.	Explanations
13.	Cell structure of fungi.	Explanations
14.	Nutrition in fungi.	Explanations
15.	Classification in fungi.	Explanations
16.	Vegetative & asexual reproduction in fungi.	Explanations
17.	Sexual reproduction in fungi	Explanations
18.	General account on Zygomycetes, Life history of *Rhizopus* sp.	Notes
19.	General account on Ascomycetes	Explanations
20.	Life cycle of *Penecillium* sp.	Explanations
21.	General account on Basidiomycetes	Explanations
22.	Life history of *Puccinia* sp.	Explanations
23.	Life history of Agaricus sp.	Explanations
24.	General account on Lichen.	Notes
25.	General account on Mycorrhiza.	Notes
26.	Economic importance of Mycorrhiza.	Notes

DIGBOI COLLEGE, DIGBOI

Course Plan (Odd Semesters)

Name of the Teacher- Dulu Moni Das

Course –Honours / Generic – Generic
Class/Semester- 1st semester (G).
Paper code:- BNC101P.
Name of the Paper- Biodiversity
Units Assigned- Practical
Marks Assigned- 12

Class	Topic/ Unit	Remarks
1	Study about Photograph of T- Phage virus & TMV.	Practical
2	Line drawing of Lytic & Lysogenic cycle.	Practical
3	Study about Permanent slides of binary fission, endospore & conjugation in bacteria.	Practical
4	Study about nodule bacteria by gram stain method.	Practical
5	Study about nodule bacteria by gram stain method.	Practical
6	Study about fungi	4 Specimen

Course – Botany Honours
Paper Code:-302
Class/Semester- 3rd semester (M)
Name of the Paper- Microbiology & Biotechnology (Theory)
Units Assigned- 1, 2, 3, 4, 5
Marks Assigned-: 32+8=40

Class	Topic/ Unit	Remarks
1.	History of Microbiology	Explanations
2.	Life & work of some notable Microbiologists	Notes
3.	Classification of Microorganism	Explanation
4.	Brief Knowledge about Cyanobacteria	Explanation
5.	Brief Knowledge about Virus	Explanation, Oral Assessment
6.	Brief Knowledge about Bacteriophage	Explanation Oral Assessment
7.	Brief Knowledge about Mycoplasma	Explanation Oral Assessment
8.	Principles of cultivation of Microorganisms	Notes
9.	Pure Culture Concept	Notes
10.	General Ecology of Soil Microorganism	Explanation
11.	Mycorrhiza	Explanation
12.	Bacteriorrhiza	Explanation
13.	Microbiology of Food and milk	Explanation & Notes
14.	Microbiology of water	Explanation & Notes
15.	Medical microbiology	Explanation
16.	Microbes related to Plant diseases	Explanation, & Notes

DIGBOI COLLEGE, DIGBOI

Course Plan (Odd Semesters)

Name of the Teacher- Dulu Moni Das

Course – Generic
Paper Code:- 302
Class/Semester- 3rd semester (M)
Name of the Paper- Microbiology (Practical)
Marks Assigned- 16

Class	Topic/ Unit	Remarks
1.	Instruments used in Microbiology	Demonstration
2.	Culture Media preparation	Practical
3.	Serial dilution technique	Practical
4.	Pure Culture Technique	Practical
5.	Gram Staining method of bacteria	Practical
6.	Study about Curd bacteria	Practical
7.	Study about nodule bacteria	Practical

Course – Generic

Paper Code:-301
Class/Semester- 3rd semester (G)
Name of the Paper- Morphology, Taxonomy and Reproduction of Angiosperm (Theory)
Units Assigned- 1 & 2
Marks Assigned- 12+3=15

Class	**Topic/ Unit**	**Remarks**
1.	Principals of Classification of Angiosperms	Explanations
2.	Linnaeus System of Classification	Explanations & Notes
3.	Bentham & Hooker's System of Classification	Explanations & Notes
4.	Engler & Prantal's System of Classification	Explanations & Notes
5.	Binomial Nomenclature	Explanation, Oral Assessment
6.	Identification & Classifications rules & norms	Explanation
7.	Morphological detail of Stem & Leaf	Explanation
8.	Morphological detail of Flower	Explanation
9.	Concept on Floral formula	Explanation, Oral Assessment
10.	Concept on Floral diagram	Explanation Oral Assessment

DIGBOI COLLEGE, DIGBOI

Course Plan (Odd Semesters)

Name of the Teacher- Dulu Moni Das

Course –Honours / Generic –Honours

Class/Semester- 5th semester (M)

Paper code:-506

Name of the Paper- Ecology & phytogeography

Units Assigned- 1, 2, 3, 4, 5

Marks Assigned- 48

Class	Topic/ Unit	Remarks
1.	Basic concept & introduction to ecology	Explanations
2.	Biotic & abiotic factors & interactions	Explanations
3.	Components of ecosystem	Explanations
4.	Pedology, Physical, chemical & biological structure of soil.	Explanations
5.	Soil profile	Explanations
6.	Role of soil in development of vegetation.	Explanations
7.	Water quality & characters.	Explanations
8.	Hydrological cycle	Explanations
9.	Water in development of vegetation & climate.	Explanations
10.	Light & temperature in development of vegetation	Explanations
11.	Fire in development of vegetation	Explanations
12.	Biotic interaction	Explanations
13.	Biotic interaction	Explanations
14.	Biotic interaction	Explanations
15.	Plant community	Explanations
16.	Synthetic characters of Plant community	Explanations
17.	Analytical characters of Plant community	Explanations
18.	Plant Succession	Explanations
19.	Plant Succession	Explanations
20.	Plant Succession	Explanations
21.	Biogeochemical cycle	Notes
22.	Biogeochemical cycle	Notes
23.	Biogeochemical cycle	Notes
24.	Adaptation in Hydrophytes	Explanations
25.	Adaptation in Xerophytes	Explanations
26.	Adaptation in Epiphytes & Halophytes	Explanations
27.	Ecosystem	Explanations
28.	Structure of Ecosystem	Explanations

DIGBOI COLLEGE, DIGBOI

Course Plan (Odd Semesters)

Name of the Teacher- Dulu Moni Das

29.	Function of Ecosystem	Explanations
30.	Energy flow in Ecosystem	Explanations
31.	Habitat degradation	Explanations
32	Ecological issues & problems.	Explanations
33.	Globel ecological problems.	Explanations
34.	Concept on EIA	Explanations
35.	Conservation Biology, Ex situ & in situ conservation.	Explanations
36.	WWC, IUCN, NBWL, NBA	Explanations
37.	Concept on Biodiversity.	Explanations
38.	Flagship, Keystone & Endemic Species	Explanations
39.	Introduction to biodiversity.	Explanations
40.	Importance & conservation of biodivrsity	Explanations
41.	Introduction to Phytogeography, Static & Dynamic Phytogeography	Explanations
42.	Phytogeographical regions of the world	PPT
43.	Phytogeographical regions of India	PPT
44.	Theories to explain distribution of Plants	Notes
45.	Origin of Life	Explanations
46.	Chemical origin of Life	Explanations
47.	Theories of organic Evolution	Explanations
48.	Theories of organic Evolution	Explanations
49.	Theories of organic Evolution	Explanations

DIGBOI COLLEGE, DIGBOI

Course Plan (Odd Semesters)

Name of the Teacher- Dulu Moni Das

Course –Honors / Generic –Major

Class/Semester- 5th semester (H)

Paper code:-507

Name of the Paper- Ecology & phytogeography

Marks Assigned- 32

Class	Topic/ Unit	Remarks
1.	Instruments used in Plant ecology.	
2.	Practical related to plant ecology.	5 practicals
3.	Practical related to ecological adaptation.	4 Specimens
4.	Practical related to phytogeography.	Model submission

Course:-Honors/Generic –Generic

Class/Semester- 5th semester (G)

Paper code:-501

Name of the Paper- Cytogenetics, Evolution & Biostatistics

Units Assigned- Practical

Marks Assigned- 32

Class	Topic/ Unit	Remarks
1.	Origin of Life	Explanations
2.	Chemical origin of Life	Explanations
3.	Theories of organic Evolution	Explanations
4.	Theories of organic Evolution	Explanations
5.	Theories of organic Evolution	Explanations

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan (Session June-December, 2022)

Name of the Teacher: Dr. Jatindra Lahkar

Course –Honours / Generic: Honours

Class/Semester: First Semester

Name of the Paper: Calculus(P) Paper Code:C1

Units Assigned: Complete Paper

Marks Assigned: Theory – 60

Class	Topic/ Unit	Remarks
1	**Unit-1**: Introductory Class: About Calculus and its historical background.	
2	Hyperbolic functions: Introduction, definitions, identities and examples. Graph of hyperbolic Functions.	
3	Derivatives and integrals of Hyperbolic functions.	
4	Evaluation of inverse hyperbolic functions and their graph.	
5	Higher order derivatives: Successive differentiation. Examples	
6	The nth derivative of some special functions and rational algebraic functions. Examples	
7	Leibnitz theorem for nth derivative of product functions and application to problems of type $e^{ax+b}\sin x$, $e^{ax+b}\cos x$,	
8	Leibnitz theorem application to problems of type $(ax+b)^n \sin x$, $(ax+b)^n \cos x$. *Symbolic operation.*	
9	Concavity and convexity and its definitions and application to real life.	
10	Point of inflexion, analytical test for concavity. Examples	
11	Asymptotes: Introduction, Definitions, Rectangular asymptotes, Oblique asymptotes and its examples.	
12	Method of finding rectangular and oblique asymptote, Examples	
13	Examples of asymptotes.	
14	Curve tracing in cartesian coordinates, tracing of cycloid, cardioid etc.	
15	Curve tracing in polar coordinates, tracing of cycloid, cardioid etc.	
16	Examples of curve tracing in cartesian and polar form.	
17	Indeterminate form: L'Hospitals ule, Definition and Rule 0/0 form, ∞/∞ form, example	
18	Rule $0\times\infty$, $\infty - \infty$, 0^0, ∞^0, $1^{\pm\infty}$ forms and its applications examples.	
19	Application of Maxima and Minima.	
20	Examples of Maxima and minima.	
21	**Unit-2**: Reduction formulae: Introduction.	

22	Derivations and illustrations of reduction formulae of the type $\int sin^n x\ dx$, $\int cos^n x\ dx$, *and for definte integrals from 0 to* $\pi/2$, *and Examples*	
23	Derivations and illustrations of reduction formulae of the type $\int tan^n x\ dx$, $\int cot^n x$, *and for definte integrals from 0 to* $\pi/2$ *and Examples*	
24	Derivations and illustrations of reduction formulae of the $\int sec^n x\ dx$, $\int cosec^n x\ dx$, *and for definte integrals from 0 to* $\pi/2$, *and Examples.*	
25	Derivations and illustrations of reduction formulae of the , $\int (logx)^n dx$, $\int sin^n x\ sin^m x\ dx$ *and examples.*	
26	Derivations and illustrations of reduction formulae of the type $\int xsin^n x\ dx$, $\int xcos^n x\ dx$, *and Examples*	
27	Derivations and illustrations of reduction formulae of the type $\int e^x sin^n x\ dx$, $\int e^x cos^n x\ dx$, *and Examples*	
28	Derivations and illustrations of reduction formulae of the type $\int cos^m x\ sinnx\ dx$, $\int cos^m x\ cosnx\ dx$, *and Examples*	
29	Volume by slicing formula and examples.	
30	Volume of solids of revolution: disk method, Formula for rotation about x-axis and y- axis and examples.	
31	Volume of solids of revolution: Washers method, Formula for Finding Volumes by Washer Method and Examples.	
32	Volume by Cylindrical Shells: Shell formula for Revolution about y-axis and examples	
33	Volume by Cylindrical Shells: Shell formula for Revolution about x-axis and examples	
34	**Unit-3**: Parameterizing a plane curve: Parametric equation of circle, half circle, parabola, ellipse, hyperbola.	
35	Tracing of curves of Parametric equation of circle, half circle, parabola, ellipse, hyperbola.	
36	Conversion of parametric to cartesian equations and vice-versa.	
37	Calculus with parametrization curves. First and second derivatives.	
38	Arc length of cartesian equations, formula and examples.	
39	Arc length of parametric curves formula and examples.	
40	Area of surface of revolution: Formula for Surface area revolving about x-axis($y\geq 0$) and examples.	
41	Formula for Surface area revolving about y-axis($x\geq 0$) and examples.	
42	Conversion of cartesian to polar coordinates and examples.	
43	Techniques of sketching conics: Techniques of sketching parabola and ellipse and hyperbola and examples.	
44	Techniques of sketching hyperbola and examples.	
45	Shifting conic sections,	
46	Classification of conic section by eccentricity.	
47	Reflection properties of parabola, ellipse and hyperbola and its uses in practical life.	
48	Quadratic equation and rotation of axes: Rotating the coordinate axes to eliminate the cross-product term, and examples.	
49	Classification into conics using the discriminant $B^2-4AC\geq 0$ with examples.	

50	Polar equations of conics: parabola, ellipse and hyperbola.	
51	**Unit-3**: Triple Product: Definition of Vector triple product and examples.	
52	Definition of Scalar triple product and examples.	
53	Volume of parallepiped and collinearity of four points.	
54	Introduction to vector functions.	
55	Operations with vector-valued functions.	
56	Limits and continuity of vector functions and examples.	
57	Differentiation and integration of vector functions and examples.	
58	Integration of vector functions and examples.	
59	Tangent and Normal components of acceleration and examples.	

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan (Session June-December, 2022)

Name of the Teacher: Dr. Jatindra Lahkar

Course –Honours / Generic: Honours

Class/Semester: Third Semester

Name of the Paper: PDE and system of PDE, Paper Code:C7

Units Assigned: Complete Paper

Marks Assigned: Theory – 60 and Practical – 20.

Class	Topic/ Unit	Remarks
1	**Unit-1**: Partial Differential Equations – Basic concepts and Definitions, order and degree of PDE.	
2	Classification of first order PDE: linear and non-liner PDE.	
3	Formation of PDE Rule-1	
4	Formation of PDE by the elimination of arbitrary constants.	
5	Formation of PDE by the elimination of arbitrary functions.	
6	Lagrange's Equation or Quasi-linear PD Equation with examples.	
7	Method of Characteristics for obtaining General Solution of Quasi Linear Equations	
8	Solution of Lagrange's Equation Rule-1 with examples.	
9	Solution of Lagrange's Equation Rule-2 with examples.	
10	Solution of Lagrange's Equation Rule-3 with examples.	
11	Solution of Lagrange's Equation Rule-4 with examples.	
12	Geometrical Interpretation of 1st order linear PDE.	
13	Integral surface through a given curve.	
14	Cauchy's problem for 1^{st} order equations.	
15	Non-linear partial differential equations: particular, singular and general and complete solution.	
16	Compatible system of 1^{st} order equation with examples.	
17	Charpit's method (General method of solving PDE of order one but of and dree)	
18	Examples on Charpit's method.	
19	Examples on Charpit's method.	
20	Jacobi's method: involving three or more independent variable.	
21	Examples on Jacobi's method.	
22	Examples on Jacobi's method.	
23	Canonical Forms of First-order Linear Equations.	
24	Method of Separation of Variables for solving first order partial differential equations.	

25	Examples on Method of Separation of Variables for solving first order partial differential equations.	
26	**Unit-2**: Classifications of second order linear equations as hyperbolic, parabolic or elliptic.	
27	Problems on Classifications of second order linear equations as hyperbolic, parabolic or elliptic.	
28	Derivations of Heat equation.	
29	Derivations of Wave equation.	
30	Derivations of Laplace equation.	
31	Solution of Heat equation.	
32	Solution of Wave equation.	
33	Solution of Laplace equation.	
34	Reduction of parabolic equation to Canonical form.	
35	Reduction of elliptic equation to Canonical form.	
36	Reduction of hyperbolic equation to Canonical form.	
37	**Unit-3:** Method of separation of variables. The principle of super position.	
38	Fourier sine and cosine series.	
39	Examples on Method of separation of variables.	
40	Examples on Method of separation of variables.	
41	General solution of Vibrating string problem, one dimensional wave equation.	
42	Example of Vibrating string problem with initial and boundary condition.	
43	Solving the Heat Conduction problem using Method of separation of variables	
44	Solving the Heat Conduction problem using Method of separation of variables with initial and boundary condition.	
45	**Unit-4:** Systems of linear differential equations.	
46	Types of linear systems with examples.	
47	Normal form linear system.	
48	Differential operators and operator method. Application.	
49	Transform of single LDE into the system of first order DE.	
50	Solution of system of LDE with operator method with examples.	
51	Alternative method for solving System of LDE.	
52	Homogeneous and Non-Homogeneous linear systems.	
53	Two Equations in two unknown functions.	
54	The method of successive approximations.	
55	Euler method, the modified Euler method	
56	The Runge-Kutta method upto fourth order approximation.	
57	**Practical:** Some MatLab command for solving PDE.	Practical: Class time 2 hours
58	Solution of Cauchy problem for first order PARTIAL DIFFERENTIAL EQUATION, Class-1	
59	Solution of Cauchy problem for first order PARTIAL DIFFERENTIAL EQUATION, Class-2	

60	Finding the characteristics for the first order PDE, Class-1	
61	Finding the characteristics for the first order PDE, Class-2	
62	Plot the integral surfaces of a given first order PDE with initial data, Class-1	
63	Plot the integral surfaces of a given first order PDE with initial data, Class-2.	
64	Solution of wave and heat equations by pdepe solver and pdetool, Class-1.	
65	Solution of wave and heat equations by pdepe solver and pdetool, Class-2.	
66	Solution of LDE by R.K. Method.	
67	Solution of LDE by successive Methods	
68	Solution of LDE by Euler and Modified Euler Methods.	
69		
70		
71		

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan (Session June-December, 2022)

Name of the Teacher: Dr. Jatindra Lahkar

Course –Honours / Generic: Honours

Class/Semester: Fifth Semester

Name of the Paper: Analytical Geometry, Paper Code:DSE-1.1

Units Assigned: Complete Paper

Marks Assigned: Theory – 80.

Class	Topic/ Unit	Remarks
1	**Unit-1**: Introduction to conic section. Definition.	
2	Derivation of standard equation of parabola.	
3	Examples on Parabola.	
4	Examples on parabola giving vertex, directrix and focus.	
5	General equation of parabola with shifting vertex.	
6	Examples on Parabola shifting vertex	
7	Equation of tangents and normal at any point on a parabola.	
8	Equation of chord of contact of the parabola.	
9	Parametric equation of parabola and Conormal points.	
10	Techniques for sketching parabola.	
11	Reflection properties of parabola.	
12	Definition and Examples on Ellipse.	
13	Examples on Ellipse giving vertex, directrix and foci, major axis, minor axis, Latus rectum.	
14	Derivation of standard equation of Ellipse.	
15	General equation of Ellipse with shifting vertex.	
16	Examples on Ellipse shifting vertex	
17	Equation of tangents and normal at any point on a Ellipse.	
18	Equation of chord of contact of the Ellipse. Auxiliary circle and eccentric angle.	
19	Parametric equation of Ellipse and Conormal points.	
20	Techniques for sketching Ellipse.	
21	Reflection properties of Ellipse.	
22	Definition and Examples on Hyperbola.	
23	Examples on Hyperbola giving vertex, directrix and foci, transverse axis, conjugate axis, Latus rectum.	
24	Derivation of standard equation of Hyperbola.	
25	General equation of Hyperbola with shifting vertex.	
26	Examples on Hyperbola shifting vertex	
27	Equation of tangents and normal at any point on a Hyperbola.	

28	Equation of chord of contact of the Hyperbola. Auxiliary circle and eccentric angle.	
29	Parametric equation of Hyperbola and Conormal points.	
30	Techniques for sketching Hyperbola.	
31	Reflection properties of Hyperbola.	
32	Classification of quadratic equations representing lines, parabola,	
33	Classification of quadratic equations representing ellipse.	
34	Classification of quadratic equations representing hyperbola.	
35	**Unit-2**: Spheres, introduction, definition.	
36	Equation of a sphere when the end points of a diameter are given.	
37	General form of equation of sphere.	
38	Equation of sphere in vector form.	
39	Equation of a sphere when centre and radius is given with examples.	
40	Plane section of a sphere, great circle.	
41	Equation of a circle.	
42	Sphere through a given circle.	
43	Intersection of two spheres.	
44	Intersection of a line and a sphere.	
45	Tangent line and tangent plane.	
46	Condition of tangency of the plane to the sphere.	
47	Orthogonal sphere and condition of orthogonality.	
48	Radical planes.	
49	Cylindrical surfaces: cone, ellipsoid.	
50	Equation of cylinder and right circular cylinder.	
51	Tracing of cylindrical surface $x^2/a^2+y^2/b^2=1$, $x=ay^2$, $a>0$, $x^2/a^2-y^2/b^2=1$.	
52	Tracing of quadric surface ellipsoid $x^2/a^2+y^2/b^2+z^2/c^2=1$.	
53	Tracing of quadric surface elliptic paraboloid $z/c=x^2/a^2+y^2/b^2$.	
54	Tracing of quadric surface hyperbolic paraboloid $z/c=x^2/a^2-y^2/b^2$.	
55	Tracing of quadric surface hyperboloid of one sheet $x^2/a^2+y^2/b^2-z^2/c^2=0$ and hyperboloid of two sheets $x^2/a^2-y^2/b^2-z^2/c^2=0$	

COURS PLAN FOR MAJOR COURSE (CBCS)
JUN 2022-DEC 22
ODD SEMESTER

Name of the Teacher : Dr. Lakshmi Devi

Course- Honours/ Generic: Honours

Class / Semester : 1st Semester

Name of the Paper : C1 (History of Assamese Literature)

Units Assigned : Unit - 3

Marks Assigned : 12

Class	Topic / Unit	Remarks
1.	Prak- Sanskari Yuga	
2.	Time	
3.	Prak- Sanskari Yugar Kabisakal	
4.	Hemsaraswati	
5.	Madhab Kandali	
6.	Haribar Bipra	
7.	Kabiratna Saraswati	
8.	Rudra Kandali	
9.	Revision	
10.	Revision	

Course- Honours/ Generic: Honours

Class / Semester : 1st Semester

Name of the Paper : C2 (History of Assamese Literature)

Units Assigned : Unit - 3

Marks Assigned : 20

Class	Topic / Unit	Remarks
1.	Modern Assamese Literature	
2.	Time	
3.	Arunodai Period	
4.	Assamese Literary Society	
5.	Jonakee Kahatar Janma	
6.	Romanticism	
7.	Bangla Prabhab	
8.	Jonakee	
9.	Lakshmi Nath Bezbaruah	
10.	Banhi	
11.	Banhir Janma Katha	
12.	Banhir Importance	
13.	Usha Kakat, Bijuli Kakat	
14.	Aabahan Kakat	
15.	Aabahan Janma	
16.	Aabahanar Time	
17.	Aabahanar Importance	

Course- Honours/ Generic: Honours

Class / Semester : 3rd Semester

Name of the Paper : C6 (Selection from Assamese Poetry)

Units Assigned : Unit – 3

Marks Assigned : 10

Class	Topic / Unit	Remarks
1.	Pratna Asomiay Kabita	
2.	Charyapada	
3.	Time	
4.	Society, Philosophy	
5.	Language Characteristics	
6.	Description about the selected poem	
7.	Abstract of poem	

Course- Honours/ Generic: Honours

Class / Semester : 3rd Semester

Name of the Paper : C7 (Studies on the Culture of Assam)

Units Assigned : Unit – 4+5

Marks Assigned : 18+12

Class	Topic / Unit	Remarks
1.	Transitional Dress of Assam	
2.	Assamese Traditional Dress	
3.	Ethnic Traditional Dress	
4.	Colour Characteristics	
5.	Special Characteristics of Bodo Dress	
6.	Special Characteristics of Karbi Dress	
7.	Traditional Ornaments of Assam	
8.	About the Traditional Ornaments	
9.	Bodo Ornaments	
10.	Karbi Ornaments	
11.	Assamese Sculpture	
12.	Sculpture Chracteristics	
13.	Sculpture of Assam Period	

Course- Honours/ Generic: Honours

Class / Semester : 5th Semester

Name of the Paper : DSE-1 (Assamese Grammar, Lexicon and Idiomatic Usages)

Units Assigned : 1, 2, 3, 4 & 5

Marks Assigned : 80

Class	Topic / Unit	Remarks
1.	Asomiya Bhasar Ucharan Bidhi	
2.	Assamese Vowels	
3.	Assamese Consonants	
4.	Asomiya Bhasar Akhar Iontani	
5.	Assamese Suffix	
6.	Assamese Difinite Article	
7.	Assamese Numbers	
8.	Assamese Gender	
9.	Assamese Nouns	
10.	Assamese Karak	
11.	Assamese Verb	
12.	Assamese Dictionary	
13.	Types of Dictionary	
14.	History of Assamese Dictionary	
15.	Asomiya Abhidhantra Sangkhiptarup	
16.	Paribhasar Dharana	
17.	Prasashanik Paribhasar Parichay	
18.	Paribhasa	
19.	Asomiya Jatuwa Ihas	
20.	Asamiya Khanda Bakaya	
21.	Revision	
22.	Revision	

Course- Honours/ Generic: Honours

Class / Semester : 5th Semester

Name of the Paper : Culture Study

Units Assigned : 1,2,3,4,5

Marks Assigned : 100

Class	Topic / Unit	Remarks
1.	Introduction of Culture	
2.	Characteristics of Culture	
3.	Types of Culture	
4.	Assamese Culture	
5.	Folklore of Assam	
6.	Definition of Culture, Folklore	
7.	Relation netween Culture and Society	
8.	Floksongs, Oral Prose etc.	
9.	Floklore and Folklilfe	
10.	Material Culture of Assam	
11.	Social Folk Custom of Assam	
12.	Folk Performing art of Assam	
13.	Assamese Ornaments and dress	

DIGBOI COLLEGE , DIGBOI

COURSE PLAN(Jun 2022-Dec 2022)

Name of the Teacher – DR . Mrinal Kumar Gogoi (ASSAMESE Dept.)

Course - Honours /GENERIC –HONOURS .

Class/Semester - B A 1st Semester (CBCS) .

Name of the paper – C-1 (History of Assamese Literature) .

Units Assigned – Unit –1 .

Marks Assigned - 16 ; Classes : 15 .

Class .	Topic/ Unit .	Remarks
1	Introduction to the whole syllabus	
2	Introduction to the History of Assamese Literature	
3	History of Assamese Literature – by Hemchndra Goswami	
4	History of Assamese Literature – by B K Kakoti	
5	History of Assamese Literature – by D Neog	
6	History of Assamese Literature – by M Neog	
7	History of Assamese Literature – by S N Sarmah	
8	The problems of Yuga-Bhibhayan of History of Assamese Literature	
9	Sankari Yug and Panchali Sahitya	
10	Pre- Jonaki Yuga	
11	Assamese Folk-Literature and Yuga Bibhajan	
12	Various types of Folk- Literature	
13	Arunodoi Yuga and Assamese Literature	
14	Modern, Modernity and Modernism of Assamese Literature	
15	Revision	

Class/Semester - B A 1st Semester (CBCS) .

Name of the paper – C 2 (History of Assamese Literature, from Arunodoi to Recent)

Units Assigned – Unit – 5 .

Marks Assigned - 16

Class .	Topic/ Unit .	Remarks
1	Introduction to the whole syllabus	
2	Introduction of Modernism	
3	Introduction to the History of Modern Assamese Literature	
4	Ramdhenu and post- Ramdhenu period	
5	A brief History of Recent Assamese Literature	
6	Elements and background of Recent Assamese Literature	
7	Poems of Nilim Kumar, Anubhav Tulsi, Sananta Tanti, Jivan Narah etc .	
8	Other poets and their Characters	
9	background of Recent Assamese Novel	
10	Recent Assamese Novel-1	
11	Recent Assamese Novel-2	
12	Recent Assamese short story-1	
13	Recent Assamese short story-2	
14	Children-Literature	
15	Bezbaruah and Children-Literature of Assam	
16	Revision	

Class/Semester - B A 3rd Semester (CBCS) .
Name of the paper – C-5 (Literary Criticism) .
Units Assigned – Unit –2 .
Marks Assigned - 20

Class .	Topic/ Unit .	Remarks
1	Definition of a Criticism	
2	Various types of Criticism	
3	Interpretative Criticism	
4	Deductive Criticism	
5	Inductive Criticism	
6	Historical Criticism	
7	Comparative Criticism	
8	Impressionistic and Idealistic Criticism	
9	Historical Criticism and Wrold Literature	
10	Comparative Criticism and Translation	
11	Qualities of a Critic-1	
12	Qualities of a Critic-2	
13	Recent trends of Criticism-1	
14	Recent trends of Criticism-2	
15	Revision	

Class/Semester - B A 3rd Semester (CBCS) .

Name of the paper – C-6 (Selection of Assamese Poetry) .

Units Assigned – Unit –5 .

Marks Assigned - 20 ; Classes : 15 .

Class .	Topic/ Unit .	Remarks
1	History of Assamese Poetry	
2	History of Romantic Assamese Poetry	
3	History of Modern Assamese Poetry	
4	Modern, Modernity and Modernism of Assamese Poetry	
5	Characteristics of Modern Assamese Poetry	
6	Elements of Modern Assamese Poetry	
7	Poems of Chandra Kr Agarwala	
8	Chandra Kr Agarwala's Poem "Madhuri"	
9	Navakanta Baruah and Assamese Poetry	
10	Characteristics of Poem of Navakanta Baruah	
11	Navakanta Baruah's Iyat Nodi Achil"	
12	Iyat Nodi Achil" and Modernity	
13	Symbolisim & Imagery of Assamese Poetry	
14	Poems of Nilmoni Phookan -1	
15	Poems of Nilmoni Phookan -2	
16	The New Voice of Modern Assamese Poetry	
16	Explaination of "Olami thoka Golapi Jamur Logna"	
17	Karavi Deka Hazarika : As a writer and Poet	
18	Explaination of "Chuli Nabandhiba Jagyasinee"	
19	Feminisim and "Chuli Nabandhiba Jagyasinee"	
20	Revision	

Class/Semester - B A 3rd Semester (CBCS) .
Name of the paper – C-7 (Studies on the Culture of Assam) .
Units Assigned – Unit –2 .
Marks Assigned - 16

Class .	Topic/ Unit .	Remarks
1	The Cultural Heritage of India	
2	Anthropological history of the people of Assam	
3	The Aryan people of Assam	
4	The Austric Race of Assam	
5	The Dravidian people of Assam	
6	The Mongoloids people of North- Eastern India.	
7	Assam and the Mongoloids Race	
8	Ahom Kingdom and assimilation of Assamese Society.	
9	Sankardeva and his time	
10	The Eastern frontier of British India	
11	The assimilation of the people of Assam	
12	The mind of Assamese Folk People	
13	The mind of Assamese Modern People	
14	Post-War Assamese Society & Culture	
15	Revision	

Class/Semester - B A 1st Semester (CBCS) .
Name of the paper – AECC (Communicative Assamese)
Units Assigned – Unit – 2
Marks Assigned - 20 ; Classes : 10

Class .	Topic/ Unit .	Remarks
1	What is Communication	
2	Verbal Communication & Non-Verbal Communication	
3	Elements of Verbal Communication	
4	Voice Modulation	
5	Voice Modulation and Asaaamese Language	
6	Sound Vibration	
7	Pronunciation	
8	Vowel of Asaaamese Language	
9	Consonant of Asaaamese Language	
10	Pause	
11	Revision	

DIGBOI COLLEGE, DIGBOI

Course Plan(June 2022 to December 2022)

Name of the Teacher: Mukul Buragohain

Course-Honours/ Generic- Honours

Class/Semester-SEM-III

Name of the Paper- C6 (Group Theory -I)

Units Assigned- Unit-1,2,3,4 & 5

Marks Assigned-80

Class	Topic/Unit	Remarks
1	**Unit-1** :Introduction to Group theory	
2	Basic definitions and operations on sets	
3	Symmetries of a square	
4	Symmetries of a square	
5	Examples	
6	Tutorial	
7	Dihedral groups	
8	Examples of Dihedral groups of various order	
9	Definition and examples of permutation groups	
10	Theorem on permutation groups	
11	Theorems on permutation groups	
12	Tutorial	
13	Definition and examples of groups	
14	Elementary properties of groups.	
15	Elementary properties of groups.	
16	Basic Theorems on groups	
17	Basic Theorems on groups	
18	Solved Examples of groups	
19	Solved Examples of groups	
20	Tutorial	
21	**Unit-2** : Subgroups and examples of subgroups	
22	Basic properties of subgroups	
23	Theorems on subgroups	
24	Theorems on subgroups	
25	Theorems on subgroups	
26	Tutorial	
27	centralizer	
28	normalizer	
29	Theorems on centralizer and normalizer	
30	Center of a group	

31	Theorems on center of a group	
32	Tutorial	
33	product of two subgroups	
34	Theorems on product of two subgroups	
35	Theorems on product of two subgroups	
36	**Unit-3** Definition and examples of cyclic groups	
37	Tutorial	
38	Properties of cyclic groups	
39	classification of subgroups of cyclic groups	
40	Theorems on Cyclic groups	
41	Theorems on Cyclic groups	
42	Permutations and Cycle notation for permutations	
43	Tutorial	
44	even and odd permutations	
45	Computation of even and odd permutations	
46	alternating group	
47	Cosets	
48	properties of cosets	
49	Tutorial	
50	Theorems on cosets	
51	Theorems on cosets	
52	Lagrange's theorem	
53	Simple application of Lagrange's theorem	
54	Fermat's Little theorem	
55	Tutorial	
56	**Unit-4** External direct product	
57	Properties of External direct product	
58	Properties of External direct product	
59	Theorems on External direct product	
60	Theorems on External direct product	
61	Tutorial	
62	normal subgroups	
63	Theorems on normal subgroups	
64	Theorems on normal subgroups	
65	factor groups	
66	Theorem on factor groups	
67	Tutorial	
68	Cauchy's theorem for finite abelian groups	
69	Application of Cauchy's theorem for finite abelian groups	
70	Tutorial	
71	**Unit-4** Group homomorphisms	
72	Examples of group homomorphism	
73	properties of homomorphisms	
74	properties of homomorphisms	

75	Cayley's theorem	
76	Tutorial	
77	Isomorphisms and its Examples	
78	properties of isomorphisms	
79	properties of isomorphisms	
80	First isomorphism theorems	
81	second isomorphism theorems	
82	Tutorial	
83	Third isomorphism theorems	
84	Application of !st, 2^{nd} & 3^{rd} isomorphism theorems	
85	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan(June 2022 to December 2022)

Name of the Teacher: Mukul Buragohain

Course-Honours

Class/Semester- V

Name of the Paper- Group Theory -II

Units Assigned- Unit :1,2,3

Marks Assigned-80

Class	Topic/Unit	Remarks
1	**Unit-1**Automorphism	
2	Solved examples	
3	Solved examples	
4	Solved examples	
5	tutorial	
6	inner automorphism	
7	Theorems on inner automorphism	
8	Theorems on inner automorphism	
9	Theorems on inner automorphism	
10	tutorial	
11	automorphism groups	
12	automorphism groups of finite cyclic groups	
13	automorphism groups of finite cyclic groups	
14	automorphism groups of infinite cyclic groups	
15	automorphism groups of infinite cyclic groups	
16	tutorial	
17	applications of factor groups to automorphism groups	
18	applications of factor groups to automorphism	

	groups	
19	applications of factor groups to automorphism groups	
20	Characteristic subgroups	
21	tutorial	
22	Solved examples on Characteristic subgroups	
23	Solved examples on Characteristic subgroups	
24	Commutator subgroup	
25	Commutator subgroup	
26	tutorial	
27	Properties of Commutator subgroup	
28	Properties of Commutator subgroup	
29	Properties of Commutator subgroup	
30	tutorial	
31	external direct products	
32	properties of external direct products	
33	properties of external direct products	
34	properties of external direct products	
35	Problems on external direct products	
36	Tutorial	
37	the group of units modulo n as an external direct product	
38	the group of units modulo n as an external direct product	
39	the group of units modulo n as an external direct product	
40	Tutorial	
41	internal direct products	
42	internal direct products	
43	internal direct products	
44	Problems on internal direct products	
45	Problems on internal direct products	
46	Tutorial	
47	Fundamental Theorem of finite abelian groups	
48	Fundamental Theorem of finite abelian groups	
49	Application of Fundamental Theorem of finite abelian groups	
50	Tutorial	
51	**Unit**: 3 Conjugation	
52	Conjugate class	
53	Groups acting on themselves by conjugation	
54	Groups acting on themselves by conjugation	
55	Groups acting on themselves by conjugation	
56	Tutorial	
57	class equation	
58	class equation and consequences	

59	class equation and consequences	
60	conjugacy in Sn	
61	conjugacy in Sn	
62	Tutorial	
63	p-groups	
64	Properties of p-groups	
65	Properties of p-groups	
66	Sylow's 1^{st} theorem	
67	Sylow's 1^{st} theorem	
68	Tutorial	
69	Sylow's 2^{nd} theorem	
70	Sylow's 2^{nd} theorem	
71	Sylow's 3^{rd} theorem	
72	Sylow's 3^{rd} theorem	
73	Sylow's theorems and consequences	
74	Tutorial	
75	Cauchy's theorem	
76	Cauchy's theorem	
77	Simplicity of Anfor $n \geq 5$	
78	non-simplicity tests	
79	Problems on non-simplicity tests	
80	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan (January 2023 to June 2023)

Name of the Teacher: Mukul Buragohain

Course-Honours/ Generic- Honours

Class/Semester- Sem-IV

Name of the Paper- C10 (Ring Theory & Linear Algebra-I)

Units Assigned- Unit-1 &2

Marks Assigned-35

Class	Topic/Unit	Remarks
1	**Unit-1:** Definition and examples of rings	
2	Solved Examples	
3	properties of rings	
4	subrings	
5	Subrings related theorem	
6	Tutorial	
7	integral domain and theorems	
8	Fields and related theorems	
9	characteristic of a ring	
10	Ideal	
11	Ideal and its properties.	
12	Tutorial	
13	ideal generated by a subset of a ring	
14	operations on ideals	
15	factor rings	
16	Theorems on factor rings	
17	prime and maximal ideals	
18	Theorems on prime ideals	
19	Theorems on maximal ideals	
20	Tutorial	
21	**Unit-2:** Ring homomorphisms	
22	Examples of Ring homomorphisms	
23	Examples of Ring homomorphisms	
24	properties of ring homomorphisms	
25	properties of ring homomorphisms	
26	Tutorial	
27	Solved problems on ring homomorphism	
28	Solved problems on ring homomorphism	
29	Solved problems on ring homomorphism	
30	Isomorphism theorems I	
31	Isomorphism theorems I	
32	Tutorial	
33	Isomorphism theorems II	
34	Isomorphism theorems III	
35	Isomorphism theorems III	
36	Solved Examples	
37	field of quotients	
38	Theorems on field of quotients	
39	Theorems on field of quotients	
40	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan(January 2023 to June 2023)

Name of the Teacher: Mukul Buragohain

Course-Honours/ Generic- Generic

Class/Semester- Sem-IV

Name of the Paper- Algebra(GE4)

Units Assigned- Unit-1 &3

Marks Assigned- 52

Class	Topic/Unit	Remarks
1	**Unit-1:** Definition and examples of groups	
2	Basic Properties of groups	
3	Basic Properties of groups	
4	Order of an element and order of a group	
5	examples of abelian and non-abelian groups	
6	Tutorial	
7	examples of abelian and non-abelian groups	
8	Theorems on abelian and non-abelian groups	
9	The group Zn of integers under addition modulo n	
10	Solved Examples related with addition modulo n	
11	Solved Examples related with addition modulo n	
12	Tutorial	
13	the group U(n) of units under multiplication modulo n	
14	Solved Examples related with multiplication modulo n	
15	Cyclic groups from number systems	
16	Cyclic groups from number systems	
17	complex roots of unity	
18	Tutorial	
19	circle group	
20	the general linear group GLn(n,R)	
21	groups of symmetries of an isosceles triangle,	
22	groups of symmetries of an equilateral triangle,	
23	groups of symmetries of a rectangle	
24	groups of symmetries of a square	
25	the permutation group Sym (n)	
26	Turorial	
27	Solved examples	
28	Solved examples	
29	Group of quaternions	
30	Tutorial	
31	**Unit-3:**Definition of rings	
32	Examples of rings	
33	Solved problems on rings	

34	Properties of rings.	
35	Properties of rings.	
36	Tutorial	
37	examples of commutative and non-commutative rings	
38	examples of commutative and non-commutative rings	
39	rings from number systems	
40	rings from number systems	
41	rings from number systems	
42	Tutorial	
43	Zn the ring of integers modulo n	
44	Zn the ring of integers modulo n	
45	ring of real quaternion	
46	ring of real quaternions	
47	rings of matrices	
48	rings of matrices	
49	Tutorial	
50	polynomial rings	
51	polynomial rings	
52	rings of continuous functions	
53	Subrings and ideals	
54	Subrings and ideals	
55	Tutorial	
56	Integral domains	
57	fields,	
58	examples of fields: Zp, Q, R, and C.	
59	Field of rationalfunctions	
60	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan (January 2023 to June 2023)

Name of the Teacher: Mukul Buragohain

Course-Honours/ Generic- Honours

Class/Semester-B.Com 4th Sem

Name of the Paper- Business Mathematics

Units Assigned- Unit-II & IV

Marks Assigned- Marks not Assigned in the syllabus

Class	Topic/Unit	Remarks
1	**Unit-2** Mathematical functions and their types	
2	linear, quadratic, polynomial ,Exponential functions	
3	Logarithmic function	
4	Problems on Logarithmic function	
5	concept of limits	
6	Tutorial	
7	Problems of limits on algebraic fraction and polynomial functions	
8	Problems of limits on trigonometric functions	
9	Problems of limits on exponential and logarithmic functions	
10	Miscellaneous example including $x \to \infty$	
11	Miscellaneous example including $x \to \infty$	
12	Tutorial	
13	concept of continuity	
14	Examples on continuity	
15	Maxima and minima of involving second and higher order derivatives	
16	Maxima and minima of involving second and higher order derivatives	
17	concept of marginal analysis , concept of elasticity	
18	Tutorial	
19	applied maximum and minimum problems including effect of tax on monopolist optimum price and quantity, economic order quantity	
20	maximum and minimum problems including effect of tax on monopolist optimum price and quantity, economic order quantity	
21	**Unit-4** Rate of interest- nominal,effective –and their inter-relationship in different compounding solution	
22	Rate of interest- nominal,effective –and their inter-relationship in different compounding solution	
23	compounding and discounting of a sum using different types of rate	
24	Tutorial	
25	compounding and discounting of a sum using different types of rate	
26	Types of annuities like ordinary, due, deferred ,continuous, perpetual and their futures and present values using different types of rate of interest	
27	Types of annuities like ordinary, due, deferred ,continuous, perpetual and their futures and present values using different types of rate of	

	interest	
28	depreciation of assets	
29	depreciation of assets .	
30	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan(January 2023 to June 2023)

Name of the Teacher: Mukul Buragohain

Course-Honours

Class/Semester- VI

Name of the Paper- Ring theory and Linear Algebra-II

Units Assigned- Unit :1,2,3

Marks Assigned-80

Class	Topic/Unit	Remarks
1	**Unit-1** Polynomial rings	
2	Polynomial rings over commutative rings	
3	division algorithm and consequences	
4	principal ideal domains	
5	principal ideal domains	
6	Tutorial	
7	factorization of polynomials	
8	factorization of polynomials	
9	reducibility tests	
10	reducibility tests	
11	Solved problems on reducibility tests	
12	Tutorial	
13	irreducibility tests	
14	irreducibility tests,	
15	Problems on irreducibility tests	
16	Problems on irreducibility tests	
17	Problems on irreducibility tests	
18	Tutorial	
19	Eisenstein criterion	
20	unique factorization in Z[x].	
21	unique factorization in Z[x].	
22	Divisibility in integral domains	
23	Divisibility in integral domains	
24	Tutorial	
25	irreducibles	
26	primes	

27	unique factorization domains	
28	unique factorization domains	
29	Euclidean domains	
30	Tutorial	
31	**Unit-2:**Dual spaces	
32	dual basis	
33	Examples of dual basis and dual space	
34	double dual	
35	Problems on double dual	
36	Tutorial	
37	transpose of a linear transformation	
38	transpose of a linear transformation and its matrix in the dual basis,	
39	Tutorial	
40	Problems on transpose of a linear transformation and its matrix in the dual basis	
41	annihilators	
42	Tutorial	
43	Problems on annihilators	
44	Eigen spaces of a linear operator	
45	diagonalizability	
46	Problems on diagonalizability	
47	Tutorial	
48	invariant subspaces	
49	Cayley-Hamilton theorem	
50	Application of Cayley-Hamilton theorem	
51	the minimal polynomial for a linear operator	
52	Problems on the minimal polynomial for a linear operator	
53	Problems on the minimal polynomial for a linear operator	
54	Problems on the minimal polynomial for a linear operator	
55	Tutorial	
56	**Unit-3** Inner product spaces,	
57	Inner product spaces and norms,	
58	Theorems on Inner product spaces and norms	
59	Theorems on Inner product spaces and norms	
60	Tutorial	
61	Gram-Schmidt orthogonalisation process	
62	Gram-Schmidt orthogonalisation process	
63	Application of Gram-Schmidt orthogonalisation process	
64	Application of Gram-Schmidt orthogonalisation process	
65	Tutorial	
66	orthogonal complements	
67	Bessel’s	

	inequality	
68	the adjoint of a linear operator	
69	Least Squares Approximation	
70	Least Squares Approximation	
71	Tutorial	
72	minimal solutions to systems of linear equations	
73	Problems on minimal solutions to systems of linear equations	
74	Normal and self-adjoint operators	
75	Normal and self-adjoint operators	
76	Orthogonal projections	
77	Tutorial	
78	Spectral theorem	
79	Spectral theorem	
80	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan(2022-23)

Name of the Teacher- Dr. Nabadweep Chamuah

Course –Honours

Class/Semester- 1st

Name of the Paper- C2-**MATHEMATICS FOUNDATION FOR ELECTRONICS**

Units Assigned-Unit- I, II, IV

Marks Assigned-46

Class	Topic/ Unit	Remarks
1	First Order Ordinary Differential Equations	
2	First Order Ordinary Differential Equations	
3	Separable Ordinary Differential Equations	
4	Exact Ordinary Differential Equations	
5	Exact Ordinary Differential Equations and Linear Ordinary Differential equations	
6	Linear Ordinary Differential equations	
7	Second Order Homogeneous and Non-Homogeneous Differential Equations	
8	Second Order Homogeneous and Non-Homogeneous Differential Equations	
9	Power series method	
10	Power series method	
11	Legendre polynomials	
12	Frobenius Method	
13	Bessel's functions of first and second kind	
14	Bessel's functions of first and second kind	
15	Error functions and gamma function.	
16	Error functions and gamma function	
17	Introduction to Matrices	
18	System of Linear Algebraic Equations	
19	Gaussian Elimination Method, Gauss -Seidel Method	
20	LU decomposition	
21	Solution of Linear System by LU decomposition	
22	Eigen Values and Eigen Vectors, Linear Transformation	
23	Properties of Eigen Values and Eigen Vectors, Cayley-Hamilton Theorem	
24	Diagonalization, Powers of a Matrix.	
25	Real and Complex Matrices	
26	Real and Complex Matrices	
27	Symmetric, Skew Symmetric, Orthogonal Quadratic Form	
28	Symmetric, Skew Symmetric, Orthogonal Quadratic Form	
29	Hermitian, Skew Hermitian	

30	Hermitian, Skew Hermitian, Unitary Matrices.	
31	Complex Variable, Complex Function,	
32	Continuity, Differentiability, Analyticity	
33	Cauchy-Riemann (C- R) Equations	
34	Harmonic and Conjugate Harmonic Functions	
35	Exponential Function, Trigonometric Functions, Hyperbolic Functions.	
36	Exponential Function, Trigonometric Functions, Hyperbolic Functions.	
37	Line Integral in Complex Plane, Cauchy's Integral Theorem	
38	Cauchy's Integral Formula, Derivative of Analytic Functions.	
39	Cauchy's Integral Formula, Derivative of Analytic Functions.	
40	Sequences, Series and Power Series	
41	Sequences, Series and Power Series	
42	Taylor's Series, Laurent Series	
43	Taylor's Series, Laurent Series	
44	Zeroes and Pole	
45	Residue integration method, Residue integration of real Integrals.	
46	Residue integration method, Residue integration of real Integrals.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Nabadweep Chamuah

Course –Honours

Class/Semester- 3rd

Name of the Paper- C-6-**DIGITAL ELECTRONICS AND VERILOG/VHDL**

Units Assigned- ALL

Marks Assigned- 60

Class	Topic/ Unit	Remarks
1	Decimal, Binary, Hexadecimal and Octal number systems, base conversions,	
2	Binary, Octal and Hexadecimal arithmetic (addition, subtraction by complement method, multiplication),	
3	representation of signed and unsigned numbers, Binary Coded Decimal code.	
4	Introduction to Boolean Algebra and Boolean operators	
5	Basic postulates and fundamental theorems of Boolean algebra	
6	Truth Tables of OR, AND, NOT, XOR, XNOR	
7	Universal (NOR and NAND) gates	
8	Fan-in, Fan out, Noise Margin, Power Dissipation, Figure of merit, Speed power product	
9	TTL and CMOS families and their comparison.	

10	TTL and CMOS families and their comparison.	
11	TTL and CMOS families and their comparison.	
12	Revision	
13	Standard representation of logic functions (SOP and POS)	
14	Karnaugh map minimization	
15	Encoder	
16	ecoder	
17	Multiplexers	
18	Implementing logic functions with multiplexer	
19	Demultiplexers	
20	binary Adder	
21	binary subtractor	
22	parallel adder/subtractor	
23	parallel adder/subtractor	
24	Revision	
25	Latches and Flip flops	
26	S-R Flip flop	
27	J-K Flip flop	
28	T and D type Flip flop	
29	Clocked and edge triggered Flip flops	
30	master slave flip flop	
31	Registers	
32	Registers	
33	Counters (synchronous and asynchronous and modulo-N)	
34	Counters (synchronous and asynchronous and modulo-N)	
35	State Table, State Diagrams	
36	counter design using excitation table and equations	
37	Ring counter and Johnson counter	
38	Ring counter and Johnson counter	
39	Basic concepts- ROM, PLA, PAL, CPLD, FPGA	
40	Basic concepts- ROM, PLA, PAL, CPLD, FPGA	
41	Basic concepts- ROM, PLA, PAL, CPLD, FPGA	
42	Revision	
43	A Brief History of HDL, Structure of HDL Module	
44	Comparison of VHDL and Verilog	
45	Introduction to Simulation and Synthesis Tools, Test Benches. VHDL Modules	
46	Delays, data flow style, behavioural style, structural style	
47	mixed design style, simulating design	
48	Introduction to Language Elements, Keywords, Identifiers, White Space Characters, Comments, format.	
49	VHDL terms, describing hardware in VHDL, entity, architectures, concurrent signal assignment, event scheduling, statement concurrency, structural designs, sequential behaviour, process statements, process declarative region, process statement region, process execution, sequential statements, architecture selection, configuration statements, power of configurations.	
50	VHDL terms, describing hardware in VHDL, entity, architectures, concurrent signal assignment, event scheduling, statement	

	concurrency, structural designs, sequential behaviour, process statements, process declarative region, process statement region, process execution, sequential statements, architecture selection, configuration statements, power of configurations.	
51	Introduction to behavioural modelling, inertial delay, transport delay , inertial delay model, transport delay model, transport vs inertial delay,	
52	Introduction to behavioural modelling, inertial delay, transport delay , inertial delay model, transport delay model, transport vs inertial delay,	
53	simulation delta drivers, driver creation, generics, block statements, guarded blocks.	
54	Process statement, sensitivity list, signal assignment vs variable assignment, sequential statements, IF, CASE, LOOP, NEXT, EXIT and ASSERT statements	
55	Process statement, sensitivity list, signal assignment vs variable assignment, sequential statements, IF, CASE, LOOP, NEXT, EXIT and ASSERT statements	
56	assertion BNF, WAIT ON signal, WAIT UNTIL expression, WAIT FOR time expression, multiple wait conditions, WAIT Time-Out, Sensitivity List vs WAIT Statement Concurrent Assignment, Passive Processes.	
57	assertion BNF, WAIT ON signal, WAIT UNTIL expression, WAIT FOR time expression, multiple wait conditions, WAIT Time-Out, Sensitivity List vs WAIT Statement Concurrent Assignment, Passive Processes.	
58	Object types-signal, variable, constant, Data types– scalar types, composite types, incomplete types, File Type caveats, subtypes, Subprograms and functions	
59	Object types-signal, variable, constant, Data types– scalar types, composite types, incomplete types, File Type caveats, subtypes, Subprograms and functions	
60	Revision	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Nabadweep Chamuah

Course –Honours

Class/Semester- 5th

Name of the Paper- C-11-**MICRO PROCESSOR AND MICROCONTROLLER**

Units Assigned- ALL

Marks Assigned- 60

Class	Topic/ Unit	Remarks
1	Introduction, Applications, Basic block diagram of microprocessors	
2	Speed, Word size, Memory capacity, Classification of microprocessors	
3	Features, Architecture of 8085	
4	General purpose registers, register pairs, flags	
5	stack pointer, program counter, types of buses	
6	Multiplexed address and data bus, generation of control signals, pin description of microprocessor 8085	
7	Basic interfacing concepts, Memory mapped I/O and I/O mapped I/O	
8	Basic interfacing concepts, Memory mapped I/O and I/O mapped I/O	
9	Operation code, Operand & Mnemonics	
10	Instruction set of 8085	
11	instruction classification, addressing modes, instruction format	
12	instruction classification, addressing modes, instruction format	
13	Assembly language programming examples.	
14	Assembly language programming examples.	
15	Assembly language programming examples.	
16	Revision	
17	Stack operations, subroutine, call and return instructions	
18	Stack operations, subroutine, call and return instructions	
19	Delay loops, use of counters, timing diagrams-instruction cycle, machine cycle	
20	Delay loops, use of counters, timing diagrams-instruction cycle, machine cycle	
21	T- states, time delay	
22	Interrupt structure of 8085A microprocessor, processing of vectored and non-vectored interrupts	
23	latency time and response time; Handling multiple interrupts	
24	Introduction, Different types of microcontroller and architecture	
25	Harvard vs. Princeton, CISC vs. RISC	

26	microcontroller memory types, microcontroller features, clocking, I/O pins,	
27	interrupts, timers, peripherals	
28	Revision	
29	Introduction to 8051, 8051 family microcontroller, Core features	**8051**
30	Architecture, pin diagram	
31	memory organization- Program and data memory organization	
32	I/O Ports	
33	oscillator module	
34	Timer modules (Timer 0, Timer 1 and Timer 2)	
35	Timer modules (Timer 0, Timer 1 and Timer 2)	
36	Revision	
37	Core features, Architecture	**PIC16F887**
38	pin diagram, memory organization	
39	Program and data memory organization, I/O Ports	
40	oscillator module,	
41	Timer modules	
42	comparator module	
43	analog-to-digital converter (ADC) module	
44	data EEPROM	
45	Enhanced capture/compare/PWM module	
46	EUSART	
47	master synchronous serial port (MSSP) module	
48	special features of the CPU	
49	Interrupts, addressing modes	
50	instruction set	
51	instruction set	
52	Revision	
53	LED, Switches, Solid State Relay	**Interfacing**
54	Seven Segment Display, 16x2 LCD display	
55	4x4 Matrix Keyboard	
56	Digital to Analog Converter	
57	Stepper Motor and DC Motor	
58	Interfacing program examples using C language.	
59	Interfacing program examples using C language.	
60	Revision	

DIGBOI COLLEGE: DIGBOI

Course Plan Odd Semester (2022 June-December)

Name of the teacher- Narendra Kumar Das
Course- Honours/Generic- Generic
Class/Semester- 1st Semester (CBCS)
Name of the paper- Disaster Management (GE-01)
Units Assigned- 3,4,5
Marks Assigned- 40

CLASS	UNITS/TOPICS TAUGHT	REMARKS
1	Concept of Disasters in India	
2	Concept of Earthquake	
3	Causes and Impact of Earthquake	
4	Distribution of Earthquake Zones in India	
5	Do's and Do not's During and Post Earthquake Disaster	
6	Mapping of Earthquake Zones in India	
7	Concept of Tsunami	
8	Causes and Impact of Tsunami	
9	History of Tsunami in India	
10	Distribution of Tsunami in India	
12	Do's and Do not's During and Post Tsunami	
13	Mapping of Tsunami Zones in India	
14	Concept of Cyclone	
15	Causes and Impact of Cyclone	
16	Distribution of Cyclones in India	
17	Do's and Do not's During Cyclone	
18	Mapping of Cyclone Zones in India	
19	Concept of Human induced disasters	
20	Cause and Impact of Human induced disasters	
21	Bhopal Gas Tragedy and Chernobyl nuclear Disaster	
22	Mitigation and Preparedness for disaters	
23	NDMA and NIDM	
24	Indigenous Knowledge and Community-Based Disaster Management	
25	Do's and Don'ts During Disasters	

DIGBOI COLLEGE: DIGBOI

Course Plan Odd Semester (2022June-December)

Name of the teacher- Narendra Kumar Das
Course- Honours/Generic- Generic
Class/Semester- 3rd Semester (CBCS)
Name of the paper- Climate Change: Vulnerability & Adaptation (GE-3)
Units Assigned- 3, 4, 5
Marks Assigned- 40

CLASS	UNIT/TOPIC	REMARKS
1	Concept and Causes of Climate Change	
2	Impact of Climate Change on Agriculture	
3	Impact of Climate Change on Water	
4	Impact of Climate Change on Fresh Water, Marine Water	
5	Socio-Economic Impacts	
6	Impact of Climate Change on Flora	
7	Impact of Climate Change on Fauna	
8	How will Climate Change Affect Biodiversity	
9	Our Work To Tackle Climate Change	
10	Effect on Endangered Species and Strategy to Save	
11	Impact of Climate Change on Human Health	
12	Mitigation Measures to minimize the effect on Human Health	
13	Difference Between Mitigating and Adapting To Climate Change	
14	What Will The Earth Look in 2030 if We Defeat Climate Change	
15	Adaptation to Climate Change	
16	Mitigation to Climate Change	
17	Global Initiatives Regarding Climate Change	
18	Initiatives of South East Asia Regarding Climate Change	
19	National Action Plan on Climate Change	
20	Strategies of NAPCC	
21	Action of Urban Local Bodies on Climate Change	
22	Action of Panchayats on Climate Change	
23	Achievements of NAPCC	
24	Challenges and Suggestions of NAPCC	

DIGBOI COLLEGE, DIGBOI

Course Plan Odd Semester (2022 June-December)

Name of the Teacher-Dr. Sangeeta Boruah Saikia

Course –Honours / Generic –Generic

Class/Semester-1st Semester (CBCS)

Name of the Paper-Disaster Management

Units Assigned-1 and 2

Marks Assigned- 40

Class	Topic/ Unit	Remarks
1.	Concept and Definitions of Disasters	
2.	Types of Disasters	
3.	Present scenario of natural Disaster in the World	
4.	Present scenario of natural Disaster in India	
5.	Causes of Natural Disaster	
6.	Impact of Natural Disaster	
7.	Concept and Definition of Hazards	
8.	Characteristics and mode of Hazards	
9.	Types of Hazards	
10.	Concept of Risk	
11.	Meaning and Classification of Vulnerability	
12.	Flood Disaster: Types of Flood	
13.	Causes of Flood	
14.	Impact of Flood	
15.	Distribution of Flood	
16.	Drought Concept: Types of Drought	
17.	Causes of Drought	
18.	Impact of Drought	
19.	Distribution of Drought	
20.	Landslide Concept: Types of Landslide	
21.	Causes of Landslide	
22.	Impact of Landslide	
23.	Distribution of Landslide	
24	Mapping of flood prone area	
25	Mapping of Drought prone area	
26.	Mapping of Landslide prone area	

DIGBOI COLLEGE, DIGBOI

Course Plan Odd Semester (2022 June-December)

Name of the Teacher-Dr. Sangeeta Boruah Saikia

Course –Honours / Generic –Generic

Class/Semester-3rd Semester (CBCS)

Name of the Paper-Climate Change : Vulnerability and Adaptation

Units Assigned-1 and 2

Marks Assigned- 40

Class	Topic/ Unit	Remarks
1.	Concept of Weather and Climate	
2.	What is Climate Change	
3.	Reconstructing past Climate	
4.	Earth Climatic History	
5.	Causes of Climate Change	
6.	Evidence of Climate Change	
7.	Consequences' of Climate Change	
8.	Concept and Processes of Green House	
9.	Green House Gases	
10.	Natural Causes of Global Warming	
11.	Manmade Causes of Global Warming	
12.	Consequences of Global Warming	
13.	Ways to prevent Global Warming	
14.	What is IPCC	
15.	Activities of IPCC	
16.	Plans and Programme of IPCC	
17.	Concept and types of Vulnerability	
18.	Climate Change and Vulnerability	
19.	Physical Vulnerability	
20.	Factors affecting Physical Vulnerability	
21.	Social Vulnerability	
22.	Factors affecting Social Vulnerability	
23.	Economic Vulnerability	
24	Factors affecting Economic Vulnerability	
25		

DIGBOI COLLEGE, DIGBOI

Course Plan

SESSION JUN-DEC, 2022

Name of the Teacher- NEELAKSHI HAZARIKA
Course –Honours / Generic – 1S HONOURS
Class/Semester- 1st Sem Honours, CBCS
Name of the Paper- C- 101
Units Assigned- All
Marks Assigned-53

Class	Topic/ Unit	Remarks
1.	**Unit I: Atomic Structure** Wave mechanics: Bohr's Theory de Broglie equation	
2.	Heisenberg's Uncertainty Principle and its significance	
3.	Schrödinger's wave equation	
4.	Normalized and orthogonal wave functions. Sign of wave functions.	
5.	Radial and angular wave functions for hydrogen atom.	
6.	Radial and angular distributioncurves.	
7.	Shapes of s, p, d and f- orbitals.	
8.	Contour boundary and probability diagrams.	
9.	Pauli's Exclusion Principle, Hund's rule of maximum multiplicity	
10.	Aufbau's principle and its limitations.	
11.	Variation of orbital energy with atomic number	
12.	Numericals	
13.	significance of Ψ and Ψ^2 .	
14.	Quantum numbers andtheir significance.	
15.	**Unit II: Periodicity of Elements:** Effective nuclear charge, shielding or screening effect	
16.	Variation of effective nuclear charge in periodic table.	
17.	Slater rules, It's applications	
18.	Atomic radii (van der Waals) and it's periodic variation	
19.	Ionic and crystal radii. Covalent radii (octahedral and tetrahedral)	
20.	Ionization enthalpy. Applications of ionization enthalpy.	
21.	Successive ionization enthalpies and factors affecting ionization energy.	
22.	Electron gain enthalpy, trends of electron gain enthalpy.	
23.	Electroneagativity and its periodic trend	
24.	Pauling's electronegativity scales, Numericals	
25.	Mulliken's electronegativity scales, Numericals	
26.	Allred Rachow's electronegativity scales, Numericals	
27.	Mulliken-Jaffé's electronegativity scales	
28.	Factors affecting Electronegativity	
29.	Applications of Electronegativity	
30.	**Unit III: Chemical Bonding** i) *Ionic bond*: General characteristics, types of ions, size effects	
31.	radius ratio rule and its limitations.	
32.	Packing of ions in crystals.	
33.	Lattice energy, Born-Lande's equation with derivation, Madelung	

	constant	
34.	Born-Haber cycle and its application, Solvation energy.	
35.	*Covalent bond*: Lewis structure, Valence Bond theory (Heitler-London approach).	
36.	Energetics of hybridization, equivalent and non-equivalent hybrid orbitals.	
37.	Resonance and resonance energy,	
38.	Molecular orbital theory. Molecular orbital diagrams of diatomic molecules N_2	
39.	Molecular orbital diagrams of O_2, C_2, B_2, F_2, CO, NO, and their ions; HCl, BeF_2	
40.	Molecular orbital diagrams of simple polyatomic molecules CO_2, (idea of s-p mixing and orbital interaction to be given).	
41.	Formal charge, Valence shell electron pair repulsion theory (VSEPR)	
42.	Shapes of simple molecules and ions containing lone pairs and bond pairs of electrons.	
43.	Multiple bonding ($\sigma-$ and $\pi-$ bond approach) and bond lengths.	
44.	Covalent character in ionic compounds, polarizing power and polarizability	
45.	Fajan's rules and consequences of polarization.	
46.	Ionic character in covalent compounds: Bond moment and dipole moment.	
47.	Percentage ionic character from dipole moment and electronegativity difference.	
48.	*Metallic Bond*: Qualitative idea of valence bond	
49.	Band theories.	
50.	Semiconductors and insulators,	
51.	Defects in solids.	
52.	*Weak Chemical Forces*: van der Waals forces, ion-dipole forces, dipole-dipole interactions	
53.	Induced dipole interactions, Instantaneous dipole-induced dipole interactions	
54.	Hydrogen bonding (theories of hydrogen bonding, valence bond treatment).	
55.	**Unit IV: Oxidation-Reduction:** Redox equations	
56.	Standard Electrode Potential and its application to inorganic reactions.	
57.	Principles involved in volumetric analysis	

DIGBOI COLLEGE, DIGBOI

Course Plan

SESSION JUN-DEC, 2022

Name of the Teacher-Neelakshi Hazarika
Course –Honours / Generic – Generic
Class/Semester- 1s Semester CBCS
Name of the Paper-Atomic Structure, Bonding,General Organic Chemistry and Aliphatic Hydrocarbons
Units Assigned- Section A: Inorganic Chemistry (Unit :I, II)
Marks Assigned- 26

Class	Topic/ Unit	Remarks
1.	Unit I: Atomic Structure Review of: Bohr's theory and its limitations	
2.	Dual behaviour of matter and radiation:de-Broglie's relation, Heisenberg Uncertainty principle.	
3.	Hydrogen atom spectra. Need of a new approach to Atomic structure	
4.	Quantum mechanics, Time independent Schrodinger equation and meaning of various terms in it.	
5.	Significance of Ψ and Ψ^2 .	
6.	Schrödinger equation for hydrogen atom	
7.	Radialand angular parts of the hydogenic wave functions (atomic orbitals) and their variations for 1s, 2s, 2p, 3s, 3p and 3d orbitals (Only graphical representation).	
8.	Radial and angular nodes and their significance.	
9.	Radial distribution functions and the concept of the most probable distancewith special reference to 1s and 2s atomic orbitals.	
10.	Significance of quantum numbers	
11.	Orbitalangular momentum and quantum numbers ml and ms.	
12.	Shapes of s, p and d atomicorbitals, nodal planes	
13.	Discovery of spin, spin quantum number (s) and magnetic spinquantum number (ms).	
14.	Rules for filling electrons in various orbitals, Electronic configurations of the atoms.	
15.	Stabilityof half-filled and completely filled orbitals, concept of exchange energy.	
16.	Relative energies of atomic orbitals, Anomalous electronic configurations	
17.	Unit II: Chemical Bonding and Molecular Structure Ionic Bonding: General characteristics of ionic bonding.	
18.	Energy considerations in ionic bonding, lattice energy and solvation energy and their importance in the context of stability and solubility of ionic compounds.	
19.	Statement of Born-Landé equation for calculation of lattice energy,	
20.	Born-Haber cycle and its applications,	
21.	Polarizing power and polarizability	

22.	Fajan'srules, ionic character in covalent compounds,	
23.	Bond moment, dipole moment and percentage ionic character.	
24.	Covalent bonding: VB Approach	
25.	Shapes of some inorganic molecules and ions on the basis of VSEPR and hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements.	
26.	Concept of resonance and resonating structures in various inorganic and organic compounds.	
27.	MO Approach: Rules for the LCAO method, bonding and antibonding MOs and theircharacteristics for s-s, s-p and p-p combinations of atomic orbitals, nonbondingcombination of orbitals	
28.	MO treatment of homonuclear diatomic molecules of 1st and 2^{nd}periods (including idea of s-p mixing) and heteronuclear diatomic molecules such as CO, NO and NO+	
29.	Comparison of VB and MO approaches.	

DIGBOI COLLEGE, DIGBOI

Course Plan

SESSION JUN-DEC, 2022

Name of the Teacher- NEELAKSHI HAZARIKA
Course –Honours / Generic – HONOURS
Class/Semester- 3rd Semester, CBCS
Name of the Paper- Inorganic Chemistry
Units Assigned- All
Marks Assigned- 53

Class	Topic/ Unit	Remarks
1.	**Unit I: General Principles of Metallurgy :** Chief modes of occurrence of metals based on standard electrode potentials.	
2.	Ellingham diagrams for reduction of metal oxides using carbon and carbon monoxide as reducing agent.	
3.	Electrolytic Reduction,	
4.	Hydrometallurgy.	
5.	Methods of purification of metals: Electrolytic Kroll process,	
6.	Parting process, van Arkel-de Boer process	
7.	Mond's process, Zone refining	
8.	**Unit II: Acids and Bases:** Brönsted-Lowry concept of acid-base reactions, solvated proton.	
9.	relative strength of acids, types of acid-base reactions,	
10.	levelling solvents	
11.	Lewis acid-base concept,	
12.	Classification of Lewis acids,	
13.	Hard and Soft Acids and Bases (HSAB) Application of HSAB principle	
14.	**Unit III: Chemistry of *s* and *p* Block Elements:** Inert pair effect, Relative stability of different oxidation states	
15.	Diagonal relationship and anomalous behaviour of first member of each group. Allotropy and catenation.	
16.	Complex formation tendency of *s* and *p* block elements.	
17.	Study of the following compounds with emphasis on structure, bonding, preparation, properties and uses of Boric acid and borates	
18.	boron nitrides,	
19.	borohydrides (diborane),	
20.	Silanes	
21.	carboranes and graphitic compounds	
22.	Oxides and oxoacids of nitrogen, Phosphorus and chlorine.	
23.	Peroxoacids of sulphur, interhalogen compounds,	
24.	Polyhalide ions, pseudohalogens and basic properties of halogens.	

25.	**Unit IV: Noble gases :**Occurrence and uses	
26.	rationalization of inertness of noble gases	
27.	Clathrates; preparation and properties of XeF_2, XeF_4 and XeF_6;	
28.	Nature of bonding in noble gas compounds (Valence bond treatment and MO treatment for XeF2).	
29.	Molecular shapes of noble gas compounds (VSEPR theory).	
30.	**Unit V: Inorganic Polymers:** Types of inorganic polymers, comparison with organic polymers	
31.	Synthesis, structural aspects and applications of silicones	
32.	Siloxanes.	
33.	Borazines	
34.	Silicates.	
35.	Phosphazenes	
36.	Polysulphates	

DIGBOI COLLEGE, DIGBOI

Course Plan

SESSION JUN-DEC, 2022

Name of the Teacher-NEELAKSHI HAZARIKA
Course –Honours / Generic – Honours
Class/Semester- 5th Semester, CBCS
Name of the Paper- Physical Chemistry, C-501
Units Assigned- II
Marks Assigned- 11

Class	Topic/ Unit	Remarks
1.	Unit II: Molecular Spectroscopy Interaction of electromagnetic radiation with molecules and various types of spectra	
2.	Vibrational spectroscopy: Classical equation of vibration	
3.	computation of force constant	
4.	amplitude of diatomic molecular vibrations,	
5.	Numericals	
6.	anharmonicity	
7.	Morse potential, dissociation energies,	
8.	fundamental frequencies	
9.	overtones	
10.	hot bands	
11.	Numericals	
12.	degrees of freedom for polyatomic molecules	
13.	modes of vibration of various molecules	
14.	Concept of group frequencies.	
15.	Vibration-rotation spectroscopy: diatomic vibrating rotator,	
16.	P, Q, R branches.	
17.	cContour diagram for HCl for various selection rules	
18.	Nuclear Magnetic Resonance (NMR) spectroscopy: Principles of NMR spectroscopy	
19.	Larmor precession, chemical shift	
20.	low resolution spectra,	
21.	different scales of nmr spectra	
22.	spin-spin coupling	
23.	Spectra of different organic molecules	

DIGBOI COLLEGE, DIGBOI

Course Plan

SESSION JUN-DEC, 2022

Name of the Teacher-NEELAKSHI HAZARIKA
Course –Honours / Generic – Honours
Class/Semester- 5th Semester, CBCS
Name of the Paper- DSE-501, Analytical Methods in Chemistry
Units Assigned- I, II,III, V
Marks Assigned- 23

Class	Topic/ Unit	Remarks
1.	Unit I: Qualitative and quantitative aspects of analysis Sampling, evaluation of analytical data	
2.	Different types of errors,Mathematical expressions.	
3.	Minimizations of errors, Numericals	
4.	accuracy and precision,	
5.	Mean deviations, Standard deviations, Coefficient of variation	
6.	Numericals	
7.	normal law of distribution if indeterminate errors,	
8.	statistical test of data; F test,	
9.	statistical test of data; Q test, rejection of data, and confidence intervals	
10.	statistical test of data; t test,	
11.	rejection of data,	
12.	confidence intervals, confidence limit	
13.	Unit II: UV-Visible and IR Spectrometry Infrared Spectrometry: Basic principles of instrumentation	
14.	choice of source in IR instrument	
15.	Monochromator & detector for single beam instrument;	
16.	Monochromator & detector for double beam instrument;	
17.	sampling techniquesin IR	
18.	Structural illustration through interpretation of data,	
19.	Structural illustration through interpretation of data,	
20.	effect and importance of isotope substitution.	
21.	Unit III: Thermal Methods of analysis: Theory of thermo-gravimetry (TG),	
22.	Basic principle of instrumentation	
23.	Techniques for quantitative estimation of Ca and Mg from their mixture.	
24.	Applications of TGA	
25.	Unit V: Separation techniques Chromatography: Classification, principle and efficiency of the technique.	
26.	Adsorption chromatography	
27.	partition chromatography	
28.	Ion exchange chromatography.	
29.	Different types of paper chromatography	
30.	Development of chromatograms: frontal, elution and displacement methods.	
31.	Qualitative and quantitative aspects of TLC	
32.	HPLC.	

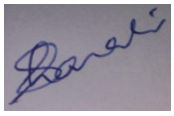
Digboi College: Department of English

Course Plan

((Jun - Dec 2022)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: **English Honours**
Class/Semester-: **FIRST**
Name of the Course/Paper: **C1: Indian Classical Literature**
Units Assigned: **I : Kalidasa - *Abhijnana Sakuntalam***
Marks Assigned: **20**

Class	Topic/ Unit	Remarks
1.	a. Introduction to literature b. Introduction to Indian Classical drama c. Briefing on Rasa theory.	Objective is to familiarize the learners with the diverse modes of literature and inspire in them a critical insight.
2.	a. A synopsis on the story of Abhijnana Sakuntalam as told in the Mahabharata b. Introduction to the major characters in Abhijnana Sakuntalam. c. Introduction to major Indian gods and goddesses	Groundwork for the play
3.	Unit-I:Abhijnana Sakuntalam: Act I	Analysis and appreciation
4.	Unit-I:Abhijnana Sakuntalam: Act I	Analysis and appreciation
5.	Unit-I:Abhijnana Sakuntalam: Act II	Analysis and appreciation
6.	Unit-I:Abhijnana Sakuntalam: Act II	Analysis and appreciation
7.	Unit-I:Abhijnana Sakuntalam: Act III	Analysis and appreciation
8.	Unit-I:Abhijnana Sakuntalam: Act III	Analysis and appreciation
9.	Unit-I:Abhijnana Sakuntalam: Act IV	Analysis and appreciation
10.	Unit-I:Abhijnana Sakuntalam: Act IV	Analysis and appreciation
11.	Unit-I:Abhijnana Sakuntalam: Act V	Analysis and appreciation
12.	Unit-I:Abhijnana Sakuntalam: Act V	Analysis and appreciation
13.	Unit-I:Abhijnana Sakuntalam: Act VI	Analysis and appreciation
14.	Unit-I:Abhijnana Sakuntalam: Act VI	Analysis and appreciation
15.	Unit-I:Abhijnana Sakuntalam: Act VII	Analysis and appreciation
16.	Unit-I:Abhijnana Sakuntalam: Act VII	Analysis and appreciation
17.	Rasas in Abhijnana Sakuntalam	Critical analysis
18.	Characterization in Abhijnana Sakuntalam	Critical analysis
19.	Interactions	Problem solving
20.	Interactions	Problem solving



Signature of faculty

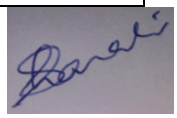
Digboi College: Department of English

Course Plan

(Jun - Dec 2022)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: English Honours
Class/Semester: **Third**
Name of the Course/Paper: **C7: British Poetry and Drama: 17th and 18th Centuries**
Units Assigned: **II (John Webster: The Duchess of Malfi) &**
III (Aphra Behn: The Rover)
Marks Assigned: **40**

Class	Topic/ Unit	Remarks
1.	a. Introduction to European Drama b. structure of tragedy and features of revenge tragedy	Familiarizing the learners the dramatic modes, structures and features
2.	a. Introducing the English Drama and dramatists. b. Introduction to the major characters	Groundwork for the play
3.	Unit-II:The Duchess of Malfi: Act I: Scene i	Analysis and appreciation
4.	Unit-II:The Duchess of Malfi: Act I: Scene i	Analysis and appreciation
5.	Unit-II:The Duchess of Malfi: Act II: Scene i	Analysis and appreciation
6.	Unit-II:The Duchess of Malfi: Act II: Scene i	Analysis and appreciation
7.	Unit-II:The Duchess of Malfi: Act II: Scene ii &iii	Analysis and appreciation
8.	Unit-II:The Duchess of Malfi: Act II: Scene iv &v	Analysis and appreciation
9.	Unit-II:The Duchess of Malfi: Act III: Scene I &ii	Analysis and appreciation
10.	Unit-II:The Duchess of Malfi: Act III: Scene ii	Analysis and appreciation
11.	Unit-II:The Duchess of Malfi: Act III: Scene iii-v	Analysis and appreciation
12.	Unit-II:The Duchess of Malfi: Act IV: Scene I	Analysis and appreciation
13.	Unit-II:The Duchess of Malfi: Act IV: Scene II	Analysis and appreciation
14.	Unit-II:The Duchess of Malfi: a. summary up to Act IV b. Act V: Scene I	Analysis and appreciation
15.	Unit-II:The Duchess of Malfi: Act V: Scene ii	Analysis and appreciation
16.	Unit-II:The Duchess of Malfi: Act V: Scene iii-v	Analysis and appreciation
17.	The Duchess of Malfi as a revenge tragedy	Critical analysis
18.	Characterization in The Duchess of Malfi	Critical analysis
19.	Interactions	Problem solving
20.	Unit-III: Introduction to English Restoration period and restoration literature/drama	Groundwork for the play
21	Unit-III: The Rover Act I Scene i	Analysis and appreciation
22	Unit-III: The Rover Act I Scene ii	Analysis and appreciation
23	Unit-III: The Rover Act II Scene i	Analysis and appreciation
24	Unit-III: The Rover Act II Scene ii	Analysis and appreciation
25	Unit-III: The Rover Act III Scene i	Analysis and appreciation
26	Unit-III: The Rover Act III Scene ii-vi	Analysis and appreciation
27	Unit-III: The Rover Act IV Scene i-v	Analysis and appreciation
28	The Rover as a restoration comedy	Critical analysis
29	Interactions	Problem solving
30	Interactions	Problem solving



Signature of faculty

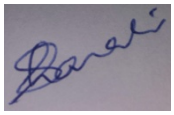
Digboi College: Department of English

Course Plan

(Jun - Dec 2022)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: English Honours
Class/Semester: **Fifth**
Name of the Course/Paper: **C12: British Literature: The early 20th century**
Units Assigned: **IV: Modernist Poetry: (part: T.S. Eliot)**
Marks Assigned: **10**

Class	Topic/ Unit	Remarks
1.	a. Introducing Modernism (ref to avant-gardes in poetry, drama, fiction, theory) .	Simplifying concepts of modernism in order to prepare the learners for studying modern literature
2.	The Love Song of J. Alfred Prufrock	Analysis and appreciation
3.	The Love Song of J. Alfred Prufrock	Analysis and appreciation
4.	The Love Song of J. Alfred Prufrock	Analysis and appreciation
5.	The Hollow Men	Analysis and appreciation
6.	The Hollow Men	Analysis and appreciation
7.		
8.		
9.		
10.		



Signature of faculty

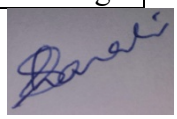
Digboi College: Department of English

Course Plan

(Jun - Dec 2022)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: English Honours
Class/Semester: **Fifth**
Name of the Course/Paper: **DSE 3: Literary Criticism**
Units Assigned: **III & IV**
Marks Assigned: **40**

Class	Topic/ Unit	Remarks
1.	Overview of Literary Criticism	Ground work
2.	Unit III: Principles of Literary Criticism Ch-1	Analysis
3.	Unit III: Principles of Literary Criticism Ch-1	Analysis
4.	Unit III: Principles of Literary Criticism Ch-2	Analysis
5.	Unit III: Principles of Literary Criticism Ch-2	Analysis
6.	Unit III: Principles of Literary Criticism Ch-34	Analysis
7.	Unit III: Principles of Literary Criticism Ch-34	Analysis
8.	Unit III: Principles of Literary Criticism -1,2,34	Summing up
9.	Unit III Practical Criticism – the Ten Difficulties	Ground work
10.	Unit III: Practical Criticism- Four Kinds of Meaning	Analysis
11.	Unit III: Practical Criticism- Four Kinds of Meaning	Analysis
12.	Unit III: Practical Criticism- Four Kinds of Meaning	Analysis
13.	Unit III: Practical Criticism- Four Kinds of Meaning	Analysis
14.	Unit III: Practical Criticism- Four Kinds of Meaning	Analysis
15.	Unit III: Practical Criticism- Four Kinds of Meaning	Analysis
16.	Unit IV: The Heresy of Paraphrase	Analysis
17.	Unit IV: The Heresy of Paraphrase	Analysis
18.	Unit IV: The Heresy of Paraphrase	Analysis
19.	Unit IV: The Heresy of Paraphrase	Analysis
20.	Unit IV: The Heresy of Paraphrase	Analysis
21	Unit IV: Second Wave Feminism-	Analysis
22	Unit IV: Second Wave Feminism	Analysis
23	Unit IV: Second Wave Feminism	Analysis
24	Unit IV: Second Wave Feminism	Analysis
25	Unit IV: Third World Feminism	Analysis
26	Unit IV: Third World Feminism	Analysis
27	Unit IV: Third World Feminism	Analysis
28	Unit IV: Third World Feminism	Analysis
29	Interactions	Doubt clearing
30	Interactions	Problem solving
31	Interactions	Problem solving
32	Interactions	Problem solving



Signature of faculty

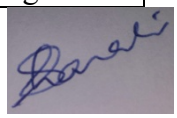
Digboi College: Department of English

Course Plan

(Jun - Dec 2022)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: **Honours (BA: Gr-A)**
Class/Semester-: **FIRST**
Name of the Course/Paper: **AECC 1: English Communication**
Units Assigned: **I, II, III, IV**
Marks Assigned: **40**

Class	Topic/ Unit	Remarks
1.	Unit I: Communication Theory and types: What is communication? Classification.	Conceptualization
2.	Unit I: Communication Theory and types: Verbal and Non-verbal; formal and informal	Analysis and demonstration
3.	Unit I: Communication Theory and types: Processes, components	Analysis
4.	Unit I: Communication Theory and types: Model - SMCR	Analysis
5.	Unit I: Communication Theory and types: Modes- vertical, horizontal, diagonal	Analysis
6.	Unit I: Communication Theory and types: levels	Analysis
7.	Unit I: Communication Theory and types: Barriers	Analysis
8.	Unit II: Speaking Skills: Monologue, dialogue	Concept and practice
9.	Unit II: Speaking Skills: Effective Communication	Analysis
10.	Unit II: Speaking Skills: GD	Concept and practice
11.	Unit II: Speaking Skills: Interview	Concept and practice
12.	Unit II: Speaking Skills: Public speech	Concept and practice
13.	Unit III: Reading and understanding: Close reading, comprehension	Concept and practice
14.	Unit III: Reading and understanding: Summary	Concept and practice
15.	Unit III: Reading and understanding: Paraphrasing	Concept and practice
16.	Unit III: Reading and understanding: Analysis and interpretation	Concept and practice
17.	Unit IV: Writing Skills: Documenting, Making Notes	Concept and practice
18.	Unit IV: Writing Skills: Report writing	Concept and practice
19.	Unit IV: Writing Skills: Letter writing	Model letter
20.	Unit IV: Writing Skills: Letter writing	Practice
21	Revision	Refreshing the concepts
22	Interaction	Problem solving



Signature of faculty

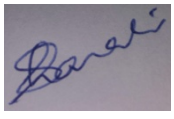
Digboi College: Department of English

Course Plan

(Jun - Dec 2022)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: **Honours (BSc)**
Class/Semester-: **FIRST**
Name of the Course/Paper: **AECC 2: Alternative English**
Units Assigned: **I & II**
Marks Assigned: **40**

Class	Topic/ Unit	Remarks
1.	Introduction to Literature; characteristics of short story	conceptualization
2.	Gandhi: Doctrine of the Sword	Analysis and critical thinking
3.	Gandhi: Doctrine of the Sword	Analysis and critical thinking
4.	Gandhi: Doctrine of the Sword	Analysis and critical thinking
5.	Ambedkar: Prospects of Democracy in India	Analysis and critical thinking
6.	Ambedkar: Prospects of Democracy in India	Analysis and critical thinking
7.	Ambedkar: Prospects of Democracy in India	Analysis and critical thinking
8.	G.B Shaw: Spoken English and Broken English	Analysis and critical thinking
9.	G.B Shaw: Spoken English and Broken English	Analysis and critical thinking
10.	G.B Shaw: Spoken English and Broken English	Analysis and critical thinking
11.	Tolstoy: How Much Land does a man need?	Analysis and appreciation
12.	Tolstoy: How Much Land does a man need?	Analysis and appreciation
13.	R.K.Narayan: An Astrologer's Day	Analysis and appreciation
14.	R.K.Narayan: An Astrologer's Day	Analysis and appreciation
15.	S.H. Manto: The Dog of Tithwal	Analysis and appreciation
16.	S.H. Manto: The Dog of Tithwal	Analysis and appreciation
17.	Interactions	Problem solving
18.	Interactions	Problem solving
19.	Interactions	Problem solving
20.	Interactions	Problem solving



Signature of faculty

COURSE PLAN, Odd Semester, June-December-2022
DEPARTMENT OF EDUCATION

Name of the Teacher: **DR. POBAN GOGOI**
Course - Honours/Generic : Honours
Class/Semester: I
Name of the Paper: Philosophical Foundations of Education
Units Assigned: I & V
Marks Assigned: 32

Sl. No. of classes	Topic/ Unit		Remarks
1	**Unit: I**	Meaning of education	
2		Nature and Scope of education	
3		Types (Formal, Informal and Non-formal)	
4		Types (Formal, Informal and Non-formal)	
5		Aims of education	
6		Aims of education	
7		The functions of Education- Individual development (Development of skill)	
8		Basic knowledge, interest and appreciation	
9		Acquaintance with heritage, (preservation and transmission)	
10		Development of human values, (Social, moral and Aesthetic)	
11		Acquisition of skills leading to self-actualization and successful living	
12		Social cohesion and social progress	
13	**Unit: V**	Concept and nature of curriculum	
14		Curriculum and Syllabus	
15		Different kinds of curriculum based on various philosophies given in this course	
16		Concept of co-curricular activity	
17		Types of co-curricular activity	
18		Various philosophical thoughts given in the course on co-curricular activities	
		Total class	**18**

COURSE PLAN, Odd Semester, June-December-2022
DEPARTMENT OF EDUCATION

Name of the Teacher: **DR. POBAN GOGOI**
Course - Honours/Generic: Honours
Class/Semester: I
Name of the Paper: **SOCIOLOGICAL FOUNDATIONS OF EDUCATION**
Units Assigned: I
Marks Assigned: 32

Sl. No. of classes	Topic/ Unit		Remarks
1	**Unit: II**	Socialization: Meaning and Process	
2		Education as a Socialization Process	
3		Agencies of socialization : Home, School, Society (Neighborhood, Peer group, Mass media, Social Media)	
4		Do	
5		Social Mobility -meaning, types, factors, Role of education in Social Mobility	
6		Do	
7		Do	
8		Emotional and National integration - meaning, importance, Role of education	
9		Do	
10		Internationalization - meaning, importance, Role of education	
11		Do	
12		Modernization: Meaning, Indicators, Role of Education	
13	**Unit: V**	Democracy-concept and basic features of Democracy, nature of education in Democracy, Role of education in inculcating democratic values.	
14		**Do**	
15		Totalitarianism: concept and basic features of Totalitarianism, nature of education in Totalitarian society	
16		Do	
17		Communism: concept of Communism, basic features, nature of education in Communist society	
18		Do	
19		Secularism: Meaning and Role of education in secular society	
20		Do	
		Total class	**20**

COURSE PLAN, Odd Semester, June-December-2022
DEPARTMENT OF EDUCATION

Name of the Teacher: **DR. POBAN GOGOI**
Course - Honours/Generic : Honours
Class/Semester: III
Name of the Paper: **GREAT EDUCATORS AND EDUCATIONAL THOUGHT**
Units Assigned: I & V
Marks Assigned: 32

Sl. No. of classes	Topic/ Unit		Remarks
1	Unit: I	Shankaracharya: Basic tenets of Shankaracharya's Advaita Shankaracharya: Vedanta Aims of education, curriculum, methods of teaching, place of teacher, place of child and discipline in Shankar's educational philosophy	
2		Do	
3		Do	
4		Do	
5		Yagya valkya: Yagya valkya and Indian Idealism (concept of soul and absolute soul) Aims of education, curriculum, methods of teaching, place of teacher, place of child and discipline in Yagya valkya's educational philosophy	
6		Do	
7		Do	
8		Do	
9		Do	
10		Sankardeva: Sankardeva's philosophy of life Aims of education, curriculum, methods of teaching, place of teacher, place of child and discipline in Sankardeva's educational philosophy Institutions and means of education	
11		Do	
12		Do	
13		Do	
14	Unit: V	Ivan Illich Illich's criticism of present education Concept of de-schooling of Illich Illich's educational thoughts Relevance of Illich's thought	
15		Do	

16		Do	
17		Do	
18		Paulo Freire Freire's criticism of present education Freire's alternative thoughts to present education Relevance of Freire's thoughts	
19		Do	
20		Do	
		Total class	**20**

COURSE PLAN, Odd Semester, June-December-2022

DEPARTMENT OF EDUCATION

Name of the Teacher: **DR. POBAN GOGOI**
Course - Honours/Generic : Honours
Class/Semester: III
Name of the Paper: **MEASUREMENT AND EVALUATION IN EDUCATION**
Units Assigned: III & V
Marks Assigned: 32

Sl. No. of classes	Topic/ Unit		Remarks
1	**Unit: III**	**Achievement Test**: Construction and Standardization of Teacher-made test and Standardized test (Preparation of Design and Blue-print, Item writing, Item analysis, Estimating reliability, validity and norms)	
2		Do	
3		Do	
4		Do	
5		**Intelligence Test**: Binet-Simon Scale and its different revisions (1905, 1908, 1911, 1966, 1937)	
6		Do	
7		Do	
8		Do	
9		Do	
10		**Aptitude Test:** Differential Aptitude test, Specific Aptitude Tests (Artistic Aptitude Test and Professional Aptitude Test)	
11		Do	
12		Do	
13		Do	
14		Personality Assessment: Self report inventories	
15		Observational methods	
16		Projective Techniques	
17		Word Association test,	
18		Rorschach Inkblot test	
19		Thematic Apperception Test (TAT)	
20	**Unit: V**	Variable: Concept, Discrete and Continuous variables	
21		Discrete and Continuous variables	
22		Graphical representation of Data and its uses	
23		Pie-diagram	
24		Bar diagram	

25		Histogram & Frequency polygon	
26		Cumulative Frequency Curve and Ogive	
27		Normal Probability Curve: Properties and uses of Normal Probability Curve	
28		Divergence from normality – Skewness	
29		Kurtosis	
30		Correlation: Positive and Negative Correlation	
31		Computation of Coefficients of Correlation by Rank Difference method	
32		Product Moment method (only for ungrouped data)	
		Total	**32**

COURSE PLAN, Odd Semester, June-December-2022
DEPARTMENT OF EDUCATION

Name of the Teacher: **DR. POBAN GOGOI**
Course - Honours/Generic: Honours
Class/Semester: III
Name of the Paper: **EXPERIMENTAL PSYCHOLOGY AND LABORATORY PRACTICAL**
Units Assigned: II & VI
Marks Assigned: 26

Sl. No. of classes	Topic/ Unit		Remarks
1	Unit: II	Meaning and nature of memory	
2		Types of memory (Long Term Memory & Short Term Memory	
3		Factors affecting memory	
4		Memory span and historical background of testing memory	
5		Memory span for digits	
6		Memory span for letters.	
7		Memory span for words and Non-sense syllables	
8		Recall and Recognition	
9	Unit: VI	Intelligence: Concept of Intelligence, Historical background of intelligence Testing.	
10		Koh's Block Design Test	
		Total class	**10**

COURSE PLAN, Odd Semester, June-December-2022
DEPARTMENT OF EDUCATION

Name of the Teacher: **DR. POBAN GOGOI**
Course - Honours/Generic: Honours
Class/Semester: V
Name of the Paper: **EDUCATION IN POST-INDEPENDENT INDIA**
Units Assigned: **All**
Marks Assigned: 80

Sl. No. of classes	Topic/ Unit		Remarks
1	**Unit: I**	A brief account of educational scenario at the time of Independence	
2		University Education Commission, 1948-49 - Aims of University Education	
3		University Education Commission, 1948-49 - Reforms of curriculum	
4		University Education Commission, 1948-49 - Administration and Funding	
5		University Education Commission, 1948-49 - Teaching and Research	
6		University Education Commission, 1948-49 - Vocational Education	
7		University Education Commission, 1948-49 - Women's Education	
8		University Education Commission, 1948-49 -Examination reform	
9		University Education Commission, 1948-49 -Students Welfare	
10		University Education Commission, 1948-49 -Implications of University Education Commission's recommendations in present Education system	
11		Education in the Indian Constitution	
12		Preamble of the Constitution	
13		Constitutional Provisions on: - Free and Compulsory Education - Early Childhood Care and Education - Secularism in Education - Study of Hindi and Official language - Education for Women - Education for Minorities - Education for ST and SC	
14		- Reasons for inclusion of Education in Concurrent List. - Challenges towards Implementation of the Constitutional provisions.	
15	**Unit: II**	Secondary Education Commission, 1952-53 - Defects of Secondary Education	
16		Secondary Education Commission, 1952-53 - Aims of Secondary Education	
17		Secondary Education Commission, 1952-53 - Organisational pattern of Secondary Education	

18		Recommendations of Secondary Education Commission	
19		Do	
20		Do	
21		Do	
22		Education Commission, 1964-66	
23		Education Commission, 1964-66 & its recommendations	
24		Do	
25		Do	
26		Implications of the Education Commission's recommendations in present Education system	
27		National Policy of Education 1968	
28		Iswarbhai Patel Review Committee, 1977	
29		Adiseshiah Committee Report, 1978	
30		National Policy of Education, 1986	
31	**Unit: III**	Do	
32		Ramamurty Review Committee, 1990 on NPE	
33		Janardan Reddy Committee Report, 1991	
34		Revised National Policy of Education, 1992	
35		Do	
40		Sarva Siksha Abhiyan (SSA): Its Objectives, Organization, Functions, Achievement	
41		Do	
42		Rashtriya Madhyamik Shiksha Abhiyan (RMSA): Its Objectives, Organization and Functions	
43		Do	
44		Right to Education (RTE), 2009: Provisions and role of respective authorities (Government, Head of the school, Teachers)	
45		Do	
46		Do	
47		Rashtriya Uchchatar Shiksha Abhiyan (RUSA): Its Objectives, organization and functions	
48		Do	
49	**Unit: IV**	National Knowledge Commission (NKC): Its recommendations for School and Higher Education	
50		Do	
51		National Curriculum Framework (NCF), 2005: Aims of Education, Curriculum, Evaluation system	
52		Do	
53		Role of NCTE in development of Indian Education	
54		UGC	
55		NAAC	
56		AICTE	
57		BCI	
58		MCI	
59		NCERT	
60		NUEPA	
61		NIOS	
		Total	**61**

DIGBOI COLLEGE, DIGBOI

Course Plan (Session June- December 2022)

Department Of Hindi

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B.A. 1st Semester

Name of the Paper- Hindi Sahitya Ka Itihas: (RitikaalTak), C-1

Units Assigned- Unit – 2 & Unit - 3

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	BhaktikaaleenPrishthabhoomi (Uday)	
3.	BhaktikaaleenPrishthabhoomi (Uday)	
4.	BhaktikaaleenPrishthabhoomi (Uday)	
5.	Tutorial / Discussion	
6.	BhaktikaaleenPrishthabhoomi (Naamkaran)	
7.	BhaktikaaleenPrishthabhoomi (Naamkaran)	
8.	BhaktikaaleenPrishthabhoomi (Naamkaran)	
9.	Tutorial / Discussion	
10.	Bhaktikaaleen Pravriti	
11.	Bhaktikaaleen Pravriti	
12.	Tutorial / Discussion	
13.	BhaktikaaleenParisthiti,	
14.	BhaktikaaleenParisthiti,	
15.	BhaktikaaleenParisthiti,	
16.	BhaktikaaleenParisthiti,	
17.	Tutorial / Discussion	
18.	Bhaktikaal ki Dharayen	
19.	Bhaktikaal ki Dharayen : Sagun Dhara	
20.	Bhaktikaal ki Dharayen : Sagun Dhara(Visheshatayen)	
21.	Bhaktikaal ki Dharayen : Sagun Dhara (Ram Kavyadhara)	
22.	Bhaktikaal ki Dharayen : Sagun Dhara (Krishna Kavyadhara)	
23.	Tutorial / Discussion	
24.	Bhaktikaal ki Dharayen :, Nirgun Dhara	
25.	Bhaktikaal ki Dharayen :, Nirgun Dhara (Visheshatayen)	
26.	Bhaktikaal ki Dharayen :, Nirgun Dhara (Sant Kavyadhara)	
27.	Bhaktikaal ki Dharayen :, Nirgun Dhara (Soofi Kavyadhara)	
28.	Bhaktikaal ki Dharayen: SaamaanyaParichaya/ Visheshatayen	
29	Tutorial / Discussion.	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B.A. 1st Semester

Name of the Paper- Hindi Sahitya Ka Itihas: (Aadhunik Kaal), C-2

Units Assigned- Unit – 3 & Unit - 4

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Hindi Gadyakaa Vikas	
3.	Hindi Gadyakaa Vikas - Samaanya Parichay,	
4.	Hindi Gadyakaa Vikas - Samaanya Parichay,	
5.	Hindi Gadyakaa Vikas - Samaanya Parichay.	
6.	Tutorial / Discussion.	
7.	Upanyaas – Udbhaw aur Vikas,	
8.	PremchandKaleenUpanyaas,	
9.	PremchandottarUpanyaas.	
10.	Kahani– Udbhaw aur Vikas,	
11.	PremchandKaleen Kahani–	
12.	Premchandottar Kahani.	
13.	Tutorial / Discussion.	
14.	Nibandh- Udbhaw aur Vikas,	
15.	ShuklayugeenNibandh,	
16.	ShuklottarNibandh.	
17.	Naataki- Udbhaw aur Vikas,	
18.	Ekanki- Udbhaw aur Vikas,	
19.	Hindi Gadya ki Anya Vidhaayen – Samanya Parichaya	
20.	Rekhachittra,	
21.	Sansmaran,	
22.	Ripotaarj,	
23.	Jeewani,	
24.	Aatmakathaa.	
25.	Tutorial / Discussion.	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B.A. 3rd Semester

Name of the Paper- Chhayaavaadottar Kavita (C-5)

Units Assigned- Unit – 1 & Unit - 2

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Kedarnaath Agrawal – Kavi Parichaya	
3.	Khet kaa Drishya-Vyakhya	
4.	Khet kaa Drishya-Vyakhya,	
5.	Pakshi-din- Vyakhya,	
6.	Pakshi-din -Vyakhya	
7.	Tutorial / Discussion	
8.	Naagaarjun - Kavi Parichaya	
9.	Kaalidas – Vyakhya,	
10.	Kaalidas– Vyakhya	
11.	Kaalidas – Vyakhya	
12.	2. Baadal ko GhirateDekhahai - Vyakhya	
13.	Baadal ko GhirateDekhahai- Vyakhya	
14.	Baadal ko GhirateDekhahai- Vyakhya	
15.	Baadal ko GhirateDekhahai- Vyakhya	
16.	Tutorial / Discussion.	
17.	Ramdhaari Singh 'Dinkar' – Kavi Parichaya	
18.	1. Himaalay- Vyakhya	
19.	Himaalay– Vyakhya	
20.	2. Budhadev - Vyakhya	
21	Budhadev – Vyakhya	
22	Tutorial / Discussion.	
23	MakhanlaalChaturwedi - Kavi Parichaya	
24	1. Geetonke Raajaa - Vyakhya	
25	Geetonke Raajaa – Vyakhya	
26	2. Pushp ki Abhilaashaa - Vyakhya	
27	Pushp ki Abhilaashaa – Vyakhya	
28	Tutorial / Discussion	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester - B.A. 3rd Semester

Name of the Paper - BhaaratiyaKaavyaShaastra (C-6)

Units Assigned - Unit -1& Unit - 2

Marks Assigned - 20 + 20

Class	Topic/ Unit	Remarks
1.	Intoduction	
2.	Kaavya Lakshan	
3.	Kaavya Lakshan	
4.	Tutorial / Discussion	
5.	Kavya Hetu	
6.	Kavya Hetu	
7.	Tutorial / Discussion	
8.	Kavya Prayojan	
9.	Kavya Prayojan	
10.	Tutorial / Discussion	
11.	Ras Siddhant	
12.	Ras ki Awadhaarana	
13.	Ras ki Awadhaarana	
14.	Tutorial / Discussion	
15.	Ras Nishpati	
16.	Ras Nishpati	
17.	Saadhaaranikaran	
18.	Tutorial / Discussion	
19.	Alankar Siddhant	
20.	Alankaron ka Vargikaran	
21	Alankaron ka Vargikaran	
22	Tutorial / Discussion	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester-B.A. 3rd Semester

Name of the Paper- PashchaatyaKaavyashasttraewam Nayee Samiksha (C-7)

Units Assigned- Unit – 3& Unit - 4

Marks Assigned- 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Kroche – Abhivyanjanaavaad	
3.	Kroche – Abhivyanjanaavaad	
4.	Tutorial / Discussion.	
5.	T. S. Eliot – Parampara aur Vaiyaktik Pratibha, Nirvaiyaktikata ka Siddhant.	
6.	T. S. Eliot – Parampara aur Vaiyaktik Pratibha,	
7.	T. S. Eliot –, Nirvaiyaktikata ka Siddhant.	
8.	Tutorial / Discussion.	
9.	I. A. Richards – Moolya Siddhant	
10.	I. A. Richards – Moolya Siddhant.	
11.	I. A. Richards – Sampreshan Siddhant,	
12.	I. A. Richards – Sampreshan Siddhant,	
13.	Tutorial / Discussion.	
14.	Nayee Samiksha,	
15.	Nayee Samiksha.	
16.	Marksvaadi Samiksha,	
17.	Marksvaadi Samiksha.	
18.	Tutorial/ Discussion	
19.	Shasttriyataavaad,	
20.	Yathaarthavaad	
21	Shaili Vigyan	
22	Tutorial/ Discussion.	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B. A. 5th Semester

Name of the Paper- Hindi NaatakewamEkanki (C-11)

Units Assigned- Unit -3& Unit - 4

Marks Assigned- 20 + 20

Class	Topic/ Unit	Remarks
1.	Aashadha ka Ek Din – Mohan Rakesh	
2.	Natak Explanation	
3.	Natak Explanation	
4.	Natak Explanation	
5.	Natak Explanation	
6.	Natak Explanation	
7.	Natak Explanation	
8.	Natak Question & Answer	
9.	Natak Question & Answer	
10.	Natak Question & Answer	
11.	Natak Question & Answer	
12.	Aashadha ka Ek Din- Vyaakhya	
13.	Aashadha ka Ek Din- Vyaakhya	
14.	Tutorial/ Discussion	
15.	Tutorial/ Discussion	
16.	Aurangajeb ki Aakhari Raat – Raam Kumar Verma,	
17.	Aurangajeb ki Aakhari Raat – Raam Kumar Verma,	
18.	Tutorial/ Discussion	
19.	Vishakanya – Govindavallabha Pant,	
20.	Vishakanya – Govindavallabha Pant,	
21.	Tutorial/ Discussion	
22.	Aur Vah Jaa N Saki – Vishnu Prabhakar	
23.	Aur Vah Jaa N Saki – Vishnu Prabhakar	
24.	Tutorial/ Discussion.	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B. A. 5th Semester

Name of the Paper- Hindi Nibandhaewam Anya GadyaVidhaayen (C-12)

Units Assigned- Unit -3 & Unit - 4

Marks Assigned- 20 + 20

Class	Topic/ Unit	Remarks
1.	Majadoori aur Prem – SardaarPoorn Singh,	
2.	Majadoori aur Prem - Explanation	
3.	Majadoori aur Prem – Vyaakhyaa	
4.	Tutorial/ Discussion	
5.	BhaavewamManovikaar – Aachaarya Ramchandra Shukla.	
6.	BhaavewamManovikaar –	
7.	BhaavewamManovikaar – Vyaakhyaa	
8.	Tutorial/ Discussion	
9.	Devdaaroo- Aachaarya Hazari Prasad Divvedi	
10.	Devdaaroo-	
11.	Devdaaroo-Vyaakhyaa	
12.	Devdaaroo- Samiksha	
13.	Tutorial/ Discussion	
14.	Mere Ram ka Mukut Bhing Raha hai – Vidyaa Nivas Mishra	
15.	Mere Ram ka Mukut Bhing Raha hai	
16.	Mere Ram ka Mukut Bhing Raha hai – Vyaakhyaa	
17.	Tutorial/ Discussion	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B. A. 5th Semester

Name of the Paper- AsamiyaBhaashaewam Sahitya (DSE-1)

Units Assigned- Unit -1& Unit - 2

Marks Assigned- 20 + 20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	AsamiyaBhaasha : Udbhav aur Vikas	
3.	AsamiyaBhaasha : Udbhav	
4.	AsamiyaBhaasha : Udbhav	
5.	AsamiyaBhaasha : Udbhav	
6.	AsamiyaBhaasha : Udbhav	
7.	AsamiyaBhaasha : Vikas	
8.	AsamiyaBhaasha : Vikas	
9.	AsamiyaBhaasha : Vikas	
10.	AsamiyaBhaasha : Vikas	
11.	Tutorial/ Discussion	
12.	Asamiya Sahitya : SaamaanyaParichaya	
13.	Asamiya Sahitya : SaamaanyaParichaya	
14.	Asamiya Sahitya : SaamaanyaParichaya	
15.	Asamiya Sahitya : SaamaanyaParichaya	
16.	Tutorial/ Discussion	
17.	Aadiyug	
18.	Aadiyug	
19.	Tutorial/ Discussion	
20.	Vaishnav Yug,	
21.	Vaishnav Yug	
22.	Tutorial/ Discussion	
23.	Romantic Yug	
24.	Romantic Yug	
25.	Tutorial/ Discussion	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B. A. 5th Semester

Name of the Paper- Chhayavaad (DSE- 2)

Units Assigned- Unit -2 & Unit - 3

Marks Assigned- 20 + 20

Class	Topic/ Unit	Remarks
1.	Intoduction	
2.	Chhayaavaadi Kaviyon men Sooryakant Tripathi 'Nirala' ka Sthan	
3.	Chhayaavaadi Kaviyon men Sooryakant Tripathi 'Nirala' ka Sthan	
4.	'Nirala' ki Kavita – Vasant Aaya- Vyaakhyaa	
5.	Vasant Aaya- Vyaakhyaa	
6.	Jaago fir Ek Baar- Vyaakhyaa	
7.	Jaago fir Ek Baar- Vyaakhyaa	
8.	Tutorial/ Discussion	
9.	Saneh Nirjhar Bah Gaya Hai - Vyaakhyaa	
10.	Saneh Nirjhar Bah Gaya Hai - Vyaakhyaa	
11.	Tutorial/ Discussion	
12.	Saroj Smriti - Vyaakhyaa	
13.	Saroj Smriti - Vyaakhyaa	
14.	Saroj Smriti - Vyaakhyaa	
15.	Saroj Smriti - Vyaakhyaa	
16.	Saroj Smriti - Vyaakhyaa	
17.	Saroj Smriti - Vyaakhyaa	
18.	Question & Answer	
19.	Question & Answer	
20.	Question & Answer	
21.	Question & Answer	
22.	Tutorial/ Discussion	
23.	Chhayaavaadi Kaviyon men Sumitranandan Pant ka Sthan	
24.	Chhayaavaadi Kaviyon men Sumitranandan Pant ka Sthan	
25.	Pant ke Kavya Sahitya ka SankshiptPrichaya	
26.	Pant ke Kavya Sahitya ka SankshiptPrichaya	
27.	Pant ke Kavya Sahitya ka SankshiptPrichaya	
28.	Pant ki Kavita – Taaj	
29.	Tutorial/ Discussion	
30.	DrutJharo JagatkeJrinpatra	
31.	DrutJharo Jagat keJrinpatra	
32.	Tutorial/ Discussion	
33.	Bharat Mata	
34.	Bharat Mata	
35.	Tutorial/ Discussion	

COURSE PLAN (2022-23)

DIGBOI COLLEGE, DIGBOI

Name of the teacher- Dr. Reepa Sarmah

Course- - Major/Non-Major: Major

Class/semester – 1 st semester

Name of the Paper – Logic (C2)

Units Assigned – Full (4 units)

Marks Assigned – 80

Class	Topic/Unit	Remarks
1	Nature of Logic	Explain
2	Nature of Logic	Explain
3	Nature of Logic	Explain &Provided Notes
4	Nature of Argument	Explain
5	Nature of Argument	Provide Notes
6	Argument and Argument form	Explain
7	Argument and Argument form	Explain
8	Argument and Argument form	Explain &Provided Notes
9	Truth and Validity	Explain
10	Truth and Validity	Provide Notes
11	Square of Opposition	Explain
12	Square of Opposition	Provide Notes
13	Mediate Inference	Explain
14	Mediate Inference	Provide Notes
15	Categorical Syllogism	Explain
16	Categorical Syllogism	Provide Notes
17	Figure	Explain
18	Figure	Provide Notes
19	Mood	Explain
20	Mood	Provide Notes
21	Venn-Diagram Techniques for testing Validity of Syllogism	Explain and Practice
22	Venn-Diagram Techniques for testing Validity of Syllogism	Explain and Practice
23	Venn-Diagram Techniques for testing Validity of Syllogism	Explain and Practice
24	Venn-Diagram Techniques for testing Validity of Syllogism	Explain and Practice
25	Venn-Diagram Techniques for testing Validity of Syllogism	Explain and Practice
26	Venn-Diagram Techniques for testing Validity of Syllogism	Explain and Practice

27	Truth Functions	Explain &Provided Notes
28	Kinds of Truth Functions	Explain
29	Kinds of Truth Functions	Provide Notes
30	Truth Table method	Explain &Provided Notes
31	Direct Truth Table method	Explain and Practice
32	Direct Truth Table method	Explain and Practice
33	Direct Truth Table method	Explain and Practice
34	Direct Truth Table method	Explain and Practice
35	Direct Truth Table method	Explain and Practice
36	Indirect truth table Method	Explain and Practice
37	Indirect truth table Method	Explain and Practice
38	Indirect truth table Method	Explain and Practice
39	Indirect truth table Method	Explain and Practice
40	Set theory	Explain
41	Set theory	Provide Notes
42	Null set	Explain &Provided Notes
43	Sub-set	Explain &Provided Notes
44	Proper set	Explain &Provided Notes
45	Union	Explain &Provided Notes
46	Intersection	Explain &Provided Notes
47	Difference	Explain &Provided Notes
48	Formal Proof of Validity	Explain &Provided Notes
49	Rules of Inference	Explain and Practice
50	Rules of Inference	Explain and Practice
51	Rules of Inference	Explain and Practice
52	Rules of Inference	Explain and Practice
53	Rules of Inference	Explain and Practice
54	Rules of Inference	Explain and Practice
55	Rules of Replacement	Explain and Practice
56	Rules of Replacement	Explain and Practice
57	Rules of Replacement	Explain and Practice
58	Rules of Replacement	Explain and Practice
59	Singular Proposition	Explain and Practice
60	Singular Proposition	Explain and Practice
61	General Proposition	Explain
62	Quantifiers	Explain
63	Rules of Quantification	Explain
64	Symbolization of Traditional Categorical Proposition	Explain
65	Symbolization of Traditional Categorical Proposition	Provide Notes

DIGBOI COLLEGE, DIGBOI

Course plan (2022-23)

Name of the teacher- Dr. Reepa Sarmah

Course- Honours / Generic- Honours

Class/semester – 3 rd semester

Name of the Paper – Indian Ethics (C6)

Units Assigned – Full (4 units)

Marks Assigned – 80

Class	Topic/Unit	Remarks
1	Ethics of Vedas	Explain
2	Ethics of Vedas	Explain
3	Rta	Explain &Provided Notes
4	Rta	Explain
5	Rna	Provide Notes
6	Rna	Explain
7	Ethics of Upanisads	Explain
8	Ethics of Upanisads	Explain &Provided Notes
9	Sreyas	Explain
10	Sreyas	Provide Notes
11	Preyas	Explain
12	Preyas	Provide Notes
13	Nisreyas	Explain
14	Nisreya	Provide Notes
15	Yajna	Explain
16	Yajna	Provide Notes
17	Yajna	Explain
18	Ethics of Bhagawat Gita	Provide Notes
19	Ethics of Bhagawat Gita	Explain
20	Ethics of Bhagawat Gita	Provide Notes
21	Svabhava	Explain and Practice
22	Svabhava	Explain and Practice
23	Svadharma	Explain and Practice
24	Svadharm	Explain and Practice
25	Jnana Marga	Explain and Practice
26	Jnana Marga	Explain and Practice
27	Bhakti Marga	Explain &Provided Notes
28	Bhakti Marga	Explain
29	Karma Marga	Provide Notes
30	Karma Marga	Explain &Provided Notes
31	Synthesis of Jnana,Karma and Bhakti marga	Explain and Practice

32	Synthesis of Jnana,Karma and Bhakti marga	Explain and Practice
33	Niskama Karma Yoga	Explain and Practice
34	Niskama Karma Yoga	Explain and Practice
35	Lokasamgraha	Explain and Practice
36	Lokasamgraha	Explain and Practice
37	Sthitaprajna	Explain and Practice
38	Dharma	Explain and Practice
39	Kinds of Dharma	Explain and Practice
40	Purusartha	Explain
41	Purusartha	Provide Notes
42	Varnasramadharma	Explain &Provided Notes
43	Varnasramadharma	Explain &Provided Notes
44	Law of Karma	Explain &Provided Notes
45	Law of Karma	Explain &Provided Notes
46	Carvaka Ethics	Explain &Provided Notes
47	Carvaka Ethics	Explain &Provided Notes
48	Buddhist Ethics	Explain &Provided Notes
49	Eight fold path	Explain and Practice
50	Eight fold path	Explain and Practice
51	Panchachila	Explain and Practice
52	Jaina Ethics	Explain and Practice
53	Triratna	Explain and Practice
54	Anubrata	Explain and Practice
55	Anubrata	Explain and Practice
56	Mahabrata	Explain and Practice
57	Mahabrat	Explain and Practice

DIGBOI COLLEGE, DIGBOI

Course plan (2022-23)

Name of the teacher- Dr. Reepa Sarmah

Course- Honours / Generic- Honours

Class/semester – 5t semester

Name of the Paper – Philosophy of Vedas and Upanishads

Units Assigned – Full (4 units)

Marks Assigned – 80

Class	Topic/Unit	Remarks
1	Introduction to Vedic philosophy	Explain
2	Introduction to Vedic philosophy	Explain
3	Introduction to Vedic Philosophy	Explain &Provided Notes
4	Introduction to Upanisadic philosophy	Explain
5	Introduction to Upanisadic philosophy	Provide Notes
6	Introduction to Upanisadic philosophy	Explain
7	Significance of Vedas	Explain
8	Significance of Vedas	Explain &Provided Notes
9	Significance of Vedas	Explain
10	Significance of Upanisads	Provide Notes
11	Significance of Upanisads	Explain
12	Significance of Upanisads	Provide Notes
13	Vedic concept of Man	Explain
14	Vedic concept of Man	Provide Notes
15	Vedic concept of Man	Explain
16	Vedic concept of nature	Provide Notes
17	Vedic concept of nature	Explain
18	Vedic concept of nature	Provide Notes
19	Vedic concept of Deities	Explain
20	Vedic concept of Deities	Provide Notes
21	Vedic concept of Deities	Explain
22	Vedic concept of Deities	Explain
23	Upanisadic Brahman	Explain and provided Notes
24	Upanisadic Brahman	Explain
25	Upanisadic Brahman	Explain
26	Upanisadic Atman	Explain and provided Notes
27	Upanisadic Atman	Explain
28	Upanisadic Atman	Explain
29	Upanisadic Atman	Provide Notes
30	Upanisadic Jiva	Explain
31	Upanisadic Jiva	Explain
32	Upanisadic Jiva	Explain

33	Upanisadic Jiva	Provide Notes
34	Upanisadic Jagat	Explain
35	Upanisadic Jagat	Explain
36	Upanisadic Jagat	Explain
37	Upanisadic Jagat	Provide Notes
38	Upanisadic Mukti	Provide Notes
39	Upanisadic Mukti	Explain
40	Upanisadic Mukti	Explain
41	Rta	Provide Notes
42	Rta	Explain
43	Rta	Explain
44	Rna	Explain
45	Rna	Explain
46	Rna	Explain
47	Rna	Provide Notes
48	Yajna	Explain
49	Yajna	Explain
50	Yajna	Provide Notes
51	Purusarthas	Explain
52	Purusarthas	Explain
53	Purusarthas	Provide Notes
54	Sreyas	Provide Notes
55	Sreyas	Explain
56	Preyas	Explain
57	Preyas	Provide Notes

DIGBOI COLLEGE, DIGBOI

Course plan (2022-23)

Name of the teacher- Dr. Reepa Sarmah

Course- Honours / Generic- Honours

Class/semester – 5th semester

Name of the Paper – Existentialism and Phenomenolism

Units Assigned – 1 unit

Marks Assigned – 20

Class	Topic/Unit	Remarks
1	Keikegaard : an introduction	Explain
2	Three stages of Existence	Explain
3	Three stages of Existence	Explain &Provided Notes
4	Three stages of Existence	Explain
5	Three stages of Existence	Provide Notes
6	Subjectivity and Truth	Explain
7	Subjectivity and Truth	Explain
8	Subjectivity and Truth	Explain &Provided Notes
9	Subjectivity and Truth	Explain
10	Gabriel Marcel :an introduction	Provide Notes
11	Being and Others	Explain
12	Being and Others	Provide Notes
13	Being and Others	Explain
14	Being and Loving	Provide Notes
15	Being and Loving	Explain
16	Being and Loving	Provide Notes

DIGBOI COLLEGE, DIGBOI

Department of English

Course Plan (June--Dec, 2022) ODD SEMESTERS

Name of the Teacher- Sanjoy Das

Class/Semester- 1st Semester (English Honours) CBCS

Name of the Paper: C 1- Indian Classical Literature

Units Assigned- II & IV

Marks Assigned- 40

Class	Topic/ Unit	Remarks
1.	Unit II- Epic Sanskrit Literature	Introduction
2.	Features of Sanskrit literature	Appreciation
3.	Vyasa's The Dicing	Introduction & Appreciation
4.	The Dicing contd.	Analysis & interpretation
5.	The Dicing contd.	Analysis & interpretation
6.	The Dicing contd.	Analysis & interpretation
7.	The Dicing contd.	Analysis & interpretation
8.	The Dicing contd.	Analysis & interpretation
9.	The Dicing contd.	Analysis & interpretation
10.	The Dicing contd.	Analysis & interpretation
11.	The Dicing contd.	Analysis & interpretation
12.	The Dicing contd.	Analysis & interpretation
13.	The Dicing contd.	Analysis & interpretation
14.	Conclusion of The Dicing	Analysis & interpretation
15.	Various aspects are taken for discussion	Discussion
16.	The Sequel to Dicing -Introduction	Analysis & interpretation
17.	The Sequel to Dicing contd.	Analysis & interpretation
18.	The Sequel to Dicing contd.	Analysis & interpretation
19.	The Sequel to Dicing contd.	Analysis & interpretation
20.	The Sequel to Dicing contd.	Analysis & interpretation
21	The Sequel to Dicing contd.	Analysis & interpretation
22	The Sequel to Dicing contd.	Analysis & interpretation
23	The Sequel to Dicing contd.	Analysis & interpretation
24	The Sequel to Dicing contd.	Analysis & interpretation
25	Various themes and perspectives undertaken	Analysis & interpretation
26	Discussion / Tutorial	Analysis & interpretation
27	Various other themes and perspectives undertaken	Discussion & interaction
28	Discussion	Discussion & interaction
29	Interaction	Discussion & interaction

30	Introduction of Classical Assamese Drama	Introduction
31	Shankardeva's Parijata Harana	Introduction
32	Text started	Analysis & interpretation
33	Text contd..	Analysis & interpretation
34	Text contd..	Analysis & interpretation
35	Text contd..	Analysis & interpretation
36	Text contd..	Analysis & interpretation
37	Concluding the text	Analysis & interpretation
38	Discussion on various thematic concerns	Discussion & interpretation
39	Character portrayal of important figures	Discussion & interpretation
40	Ankiya naats and its various features and Parijat Haran as an Ankiya naat discussed	Discussion & interpretation

DIGBOI COLLEGE, DIGBOI

Session: (June- Dec, 2022)

Name of the Teacher- Sanjoy Das

Class/Semester- 1st Semester

Course- AECC 1: English Communication

Unit's Assigned- I & III

Marks Assigned- 20

Class	Topic/ Unit	Remarks
1.	Unit I- Communication: Theory and types started	Introduction
2.	Theory of communication	Analysis & interpretation
3.	Contd…	Analysis & interpretation
4.	Types and modes of communication discussed	Discussion and interaction
5.	Contd…	Analysis & interpretation
6.	Verbal & Non-verbal communication	Analysis & interpretation
7.	Contd…	Analysis & interpretation
8.	Personal, Social and Business communication discussed	Analysis & interpretation
9.	Contd…	Analysis & interpretation
10	Contd…	Analysis & interpretation
11	Barriers to communication and various strategies to overcome them are discussed	Analysis & interpretation
12.	Contd…	Analysis & interpretation
13.	Contd…	Analysis & interpretation
14.	Intra-personal, Inter-personal and Group Communication started	Analysis & interpretation
15.	Contd…	Analysis & interpretation
16.	Contd…	Discussion
17	Unit III- Reading and Understanding started	Interaction
18.	Close Reading defined and its features	Interaction
19	Contd…	Analysis & interpretaion
20	Comprehension of texts analysed along with exercises	Analysis & interpretation
21	Contd….	Analysis & interpretation
22	Contd…	Interpretation
23	Summary of texts discussed and ways of summarizing	Analysis & interpretation
24	Contd…	Analysis & interpretation
25	Contd…	Analysis & interpretation
26	Paraphrasing introduced – difference with summarizing discussed	Analysis & interpretation
27	Contd…	Discussion and interaction
28	Analysis and interpretation of texts highlighted	Discussion and interaction
29	Contd…	Discussion and interaction

DIGBOI COLLEGE, DIGBOI

Session: (June- Dec, 2022)

Name of the Teacher- Sanjoy Das

Class/Semester- 3rd Semester

Course 5: American Literature

Unit's Assigned-Unit IV (Poetry)

Marks Assigned- 20

Class	Topic/ Unit	Remarks
1.	American poetry and its characteristics taken for discussion	Introduction
2.	Contd…	Introduction
3.	Anne Bradstreet's The Prologue	interpretation
4.	Contd…	Analysis & interpretation
5.	Contd…	Analysis & interpretation
6.	Contd…	Analysis & interpretation
7.	Feminist concerns discussed	Analysis & interpretation
8	Contd…	Analysis & interpretation
9.	Literary devices discussed	Analysis & interpretation
10.	Walt Whitman's O Captain, My Captain: background information given	Analysis & interpretation
11.	The poem started	Analysis & interpretation
12	Contd…	Analysis & interpretation
13	Critical perspectives are highlighted	Analysis & interpretation
14	Poem- 'Passage to India' started	Analysis & interpretation
15	Contd…	Analysis & interpretation
16	Contd…	Analysis & interpretation
17	Critical analysis of the poem	Analysis & interpretation
18	Robert Frost's Mending Wall	Analysis & interpretation
19	Contd…	Analysis & interpretation
20	Critical appreciation of the poem	Analysis & interpretation
21	Literary devices discussed	Analysis & interpretation

22	Alexie Sherman Alexie ‘Crow Testament’	Analysis & interpretation
23	Contd…	Analysis & interpretation
24	Various thematic concerns elaborated	Analysis & interpretation
25	Contd…	Analysis & interpretation

DIGBOI COLLEGE, DIGBOI

Session: (June- Dec, 2022)

Name of the Teacher- Sanjoy Das

Class/Semester- 3 Semester

Course 6: Popular Literature

Unit's Assigned-Unit I

Marks Assigned- 20

Class	Topic/ Unit	Remarks
1.	Children's literature at a nutshell	Introduction
2.	Characteristics discussed	Analysis & interpretation
3.	Lewis Carroll's Through the Looking Glass started	Analysis & interpretation
4.	Contd…	Analysis & interpretation
5.	Contd…	Analysis & interpretation
6.	Contd…	Analysis & interpretation
7.	Contd…	Analysis & interpretation
8.	Contd…	Analysis & interpretation
9.	Contd…	Analysis & interpretation
10.	Important questions discussed	Analysis & interpretation
11.	Contd…	Analysis & interpretation
12.	Discussion & interaction	Discussion & interaction

DIGBOI COLLEGE, DIGBOI

Session: (June- Dec, 2022)

Name of the Teacher- Sanjoy Das

Class/Semester- 5th Semester

Course 12: British Literature: The Early 20th Century

Unit's Assigned-Unit III

Marks Assigned- 20

Class	Topic/ Unit	Remarks
1.	Stream of Consciousness novel at a nutshell	Introduction
2.	Characteristic features discussed	Analysis & interpretation
3.	Virginia Woolf's Mrs Dalloway started	Analysis & interpretation
4.	Contd…	Analysis & interpretation
5.	Contd…	Analysis & interpretation
6.	Contd…	Analysis & interpretation
7.	Contd…	Analysis & interpretation
8.	Contd…	Analysis & interpretation
9.	Various themes and motifs discussed	Analysis & interpretation
10.	Important questions discussed	Analysis & interpretation
11.	Contd…	Analysis & interpretation
12.	Discussion & interaction	Discussion & interaction

DIGBOI COLLEGE, DIGBOI

Session: (June- Dec, 2022)

Name of the Teacher- Sanjoy Das

Class/Semester- 5th Semester

Course- DSE 3: Literary Criticism

Unit's Assigned-Units I & II

Marks Assigned- 30 (20+10)

Class	Topic/ Unit	Remarks
1.	Unit I- William Wordsworth's Preface to the Lyrical Ballads (1802) -Background information	Introduction
2.	Text contd…	Analysis & interpretation
3.	Contd…	Analysis & interpretation
4.	Contd…	Analysis & interpretation
5.	Contd…	Analysis & interpretation
6.	Contd…	Analysis & interpretation
7.	Contd…	Analysis & interpretation
8.	Contd…	Analysis & interpretation
9.	Important topics and ideas are elaborated	Analysis & interpretation
10.	Important questions discussed	Analysis & interpretation
11.	Contd…	Analysis & interpretation
12.	Contd…	Discussion & interaction
13	S. T. Coleridge's Biographia Literaria started	Analysis & interpretation
14	The text contd…	Analysis & interpretation
15	Contd…	Analysis & interpretation
16	Contd…	Analysis & interpretation
17	Contd…	Analysis & interpretation
18	Important issues are addressed	Analysis & interpretation
19	Probable questions are discussed	Discussion & interpretation

20	Unit II- Virginia Woolf's Modern Fiction started	Analysis & interpretation
21	Contd…	Analysis & interpretation
22	Contd…	Analysis & interpretation
23	Contd…	Analysis & interpretation
24	Pertinent issues are discussed	Analysis & interpretation
25	Contd…	Analysis & interpretation
26	Probable questions are discussed	Discussion & interpretation

COURSE PLAN FOR MAJOR COURSE (CBCS)
SESSION JUN, 2022-DEC, 2022
ODD SEMESTER

Name of the Teacher:- Simanta Bordoloi
Department of Assamese
Digboi College, Digboi

Class: BA 1st Semester
Name of the paper: History of Assamese Literature
Paper Code: C1
Unit Assignes: Unit-5 (Shankarottar Jug)
Marks Assign: 20

Class	Topic/Unit	Remarks
1	Sankarottar Jugar Patabhumi	
2	Sankarottar Jugar Sahityar Boishistya	
3	Bhattadevor chamu parichoy	
4	Bhattadevor Sahityakriti	
5	Bhattadevor gadya	
6	Charit Sahityor Utpatti	
7	charit Sahityar Chamu arichoy	
8	Gadya Charit	
9	Charit Puthir Bhasha	
10	Buranji Sahityar Utpatti	
11	Buranjir Gadya	
12	Byaboharik Sahityar Parichoy	
13	Bhattdevor Gadya, Charit Puthir Gadya aru Buranji Gadyar Tulona	
14	Revision	
15	Revision	
16	Revision	

Class: BA 1st Semester
Name of the paper: History of Assamese Literature
Paper Code: C2
Unit Assignes: Unit-2 (Adhunik Asomiya Bhasha Sahityar Pratishtha)
Marks Assign: 16

Class	Topic/Unit	Remarks
1	Adhunik Asomiya Bhasha Sahityar Patabhumi	
2	Missionery Sakalor Asom Agomon	
3	Asomiya Bhashar Sankat kal	
4	Missioonerry sakalar Bhumika	
5	Arunody prakash	
6	Arunodyr Chrishtian likhok sakalor Parichoy Aru Abadan	
7	Arunodyr Asomiya Likhok sakalar Parichoy Aru Abadan	
8	Arunodyar Bhasha aru Gadya	
9	Hemchandra Baruar Parichoy	
10	Hemchandra Baruar Asomiya Sahityaloi Abadan	
11	Gunabhiram Baruar Parichoy	
12	Gunabhiram Baruar Asomiya Sahityaloi Abadan	
13	Revision	
14	Revision	
15	Revision	

Class: BA 3rd Semester
Name of the paper: Literary Criticism
Paper Code: C5
Unit Assignes: Unit-1 (Definition of literature, Classification of Literature)
Marks Assign: 16

Class	Topic/Unit	Remarks
1	Definition of Literature	
2	Types of Literature	
3	Classification of Literature	
4	Inspiration of Literature	
5	Aim and objective of Literature	
6	Source of Literature	
7	Revision	
8	Revision	
9	Revision	
10	Revision	

Class: BA 3rd Semester
Name of the paper: Literary Criticism
Paper Code: C5
Unit Assignes: Unit-3 (Bibhinna Sahitya Rupor Sanjnya aru swarup: Poetry, Drama, One act play)
Marks Assign: 22

Class	Topic/Unit	Remarks
1	Definition of Poetry	
	Elemnts of Poetry	
2	Types of Poetry	
3	Definition of Drama	
4	Elements of Drama	
5	Types of Drama	
6	Origin o Drama: a short history	
7	Origin of One act Play	
8	Characteristics of One act Play	
9	Revision	
10	Revision	
11	Revision	
12	Revision	

Class: BA 3rd Semester
Name of the paper: Literary Criticism
Paper Code: C-6
Unit Assignes: Unit-3 (Purani Asomiya Kabita)
Marks Assign: 20

Class	Topic/Unit	Remarks
1	Madhav Kandalir kabyakriti	
2	Ramayanar Itihas	
3	Madhav Kandalir Anubad riti	
4	Kabyanshar Alochana	
5	Kabyik Soundrya	
6	Borgeetr Boishistya	
7	Sankardevor Kabyakriti	
8	Borgeettutr alochana	
9	MAdhavdevor Kabyakriti	
10	Namgoshar Parichoy	
11	Kabyanshar Alochana	
12	Pitambarar KAbyakriti	
13	Usha Porinoyr Kabyik Saundarya	
14	Revision	
15	Revision	
16	Revision	
17	Revision	

Class: BA 5th Semester
Name of the paper: Assamese Drama
Paper Code: C 11
Unit Assignes: Unit-1 (Assamese Drama: Short History)
Marks Assign: 16

Class	Topic/Unit	Remarks
1	Background of Asssamese Drama	
2	Asssamese drama in 19th century	
3	Assamese drama in 20th century	
4	Assamese Drama in 20th century	
5	Post war Assamese drama	
6	Post war Assamese Drama	
7	Post war Assamese Drama	
8	Importance of stage in development of drama	
9	Revision	
10	Revision	
11	Revision	
12	Revision	

Class: BA 5th Semester
Name of the paper: Assamese Drama
Paper Code: C 11
Unit Assignes: Unit-4 (Modern Assamese Drama): Kukurnechia Manuh, Dhantu Potantu)
Marks Assign: 24

Class	Topic/Unit	Remarks
1	Arun Sharma as a Dramatist	
2	Contribution of Arun Sharma to Assamese Drama	
3	Kukurnechia Manuh: an analytcal duscussion	
4	Main Character of Kukurnechia manuh	
5	Jugen Chetia as a dramatist	
6	Contribution of Jugen Chetia to Assamese Drama	
7	Dhantu Potantu: an analytical discusssion	
8	Dhant Potantu as a one act play	
9	Characteristics of one act play	
10	Revision	
11	Revision	
12	Revision	
13	Revision	
14	Revision	

DIGBOI COLLEGE, DIGBOI

COURSE PLAN

SESSION: 2022--23

Name of Teacher: **Bisti Ram Narzary**

Course : Honours/Generic – Honours

Class/Semester : 1st Semester (H)

Paper Code : C1, Name of the paper-- Indian Philosophy

Unit Assigned : Full Paper

Marks Assigned : 80

Class	Topic/Unit	Remarks
1	Introduction to Indian philosophy	Explanations
2	Introduction to Indian philosophy	Notes
3	Common Features of Indian philosophical Schools	Explanations & Notes
4	The Upanisads doctrine of Self	Explanations & Notes
5	The Upanisads Critique of Rituals	Explanations & Notes
6	Carvaka Metaphysics	Explanations & Notes
7	Carvaka Epistemology	Explanations & Notes
8	Carvaka Epistemology	Notes
9	Early Buddhism	Explanations & Notes
10	Four noble Truths	Explanations & Notes
11	Doctrine of Dependent Origination (Pratityasamudpada)	Explanations & Notes
12	Anekantavada of Jainism	Explanations & Notes
13	Syadvada of Jainism	Explanations & Notes
14	Nyaya theory of the nature of Knowledge	Explanations & Notes
15	Vaisesika theory of the nature of Knowledge	Explanations & Notes
16	Mimamsa theory of the nature of Knowledge	Explanations & Notes
17	Samkhya theory of Prakriti	Explanations & Notes
18	Samkhya theory of Purusa	Explanations & Notes
19	Samkhya theory of Evolution	Explanations & Notes
20	Asatkaryavada and asatkaryavada Debate	Explanations & Notes
21	Advaita Vedanta of Sankara	Explanations & Notes
22	Nature of Brahman (Sankara)	Explanations & Notes
23	Nature of Maya (Sankara)	Explanations & Notes
24	Visistadvaita of Ramanuja	Explanations & Notes
25	Nature of Brahman (Ramanuja)	Explanations & Notes
26	Refutation of Maya (Ramanuja)	Explanations & Notes

DIGBOI COLLEGE, DIGBOI

COURSE PLAN

Name of Teacher: Bisti Ram Narzary

Course : Honours/Generic – Generic

Class/Semester : 1st Semester (GE)

Paper Code : GE-1, Name of the paper—Introduction to Philosophy

Unit Assigned : Full Paper

Marks Assigned : 80

Class	Topic/Unit	Remarks
1	Definition of Philosophy	Explanations
2	Nature of Philosophy	Explanations
3	Scope of Philosophy	Explanations & Notes
4	Relevance of Philosophy	Explanations & Notes
5	Relation between Philosophy and Science	Explanations & Notes
6	Theories of Knowledge	Explanations
7	Rationalism	Explanations & Notes
8	Empiricism	Explanations & Notes
9	Kant's Critical theory	Explanations & Notes
10	Realism	Explanations
11	Naive Realism	Explanations & Notes
12	Scientific Realism	Explanations & Notes
13	Idealism	Explanations
14	Subjective Idealism	Explanations & Notes
15	Objective Idealism	Explanations & Notes
16	Categories of Knowledge---	Explanations & Notes
17	Space, Time, Substance, Causality	Explanations & Notes
18	Correspondence theory of Truth	Explanations & Notes
19	Coherence theory of Truth	Explanations & Notes
20	Pragmatic theory of truth	Explanations & Notes

DIGBOI COLLEGE, DIGBOI

COURSE PLAN

Name of Teacher: Bisti Ram Narzary

Course : Honours/Generic – Honours

Class/Semester : 3rd Semester (H)

Paper Code : C7, Name of the paper—Western Ethics

Unit Assigned : Full Paper

Marks Assigned : 80

Class	Topic/Unit	Remarks
1	Nature of Ethics	Explanations
2	Scope of Ethics	Notes
3	Utility of the study of Ethics	Explanations & Notes
4	Moral Concept of Good	Explanations & Notes
5	Moral Concept of Ought	Explanations & Notes
6	Moral Concept of Right	Explanations & Notes
7	Moral and Non-Moral Action	Explanations & Notes
8	Voluntary Action: its Stages	Explanations & Notes
9	Characteristics of Moral Consciousness	Explanations & Notes
10	Elements of Moral consciousness	Explanations & Notes
11	Nature of Moral Judgement	Explanations & Notes
12	Object of Moral Judgement	Explanations & Notes
13	Postulates of Morality	Explanations & Notes
14	Virtue Ethics of Aristotle	Explanations & Notes
15	Teleological Ethics: Egoism and Altruism	Explanations & Notes
16	Deontological Ethics of Kant	Explanations & Notes
17	Duty and Conflict of Duties	Explanations & Notes
18	Crime and Punishment	Explanations & Notes
19	Preventive theory of Punishment	Explanations & Notes
20	Reformative theory of Punishment	Explanations & Notes
21	Retributive theory of Punishment	Explanations & Notes
22	Capital Punishment	Explanations & Notes
23	Euthanasia	Explanations & Notes

DIGBOI COLLEGE, DIGBOI
COURSE PLAN

Name of Teacher: Bisti Ram Narzary
Course : Honours/Generic – Honours
Class/Semester : 3rd Semester (Generic)
Paper Code : GE3, Name of the paper—Western Ethics
Unit Assigned : Unit- I & Unit -II
Marks Assigned : 30

Class	Topic/Unit	Remarks
1	Nature of Indian Philosophy	Explanations
2	Chief Characteristics of Indian Philosophy	Notes
3	Astika (Orthodox) Schools	Explanations & Notes
4	Nastika (Heterodox) Schools	Explanations & Notes
5	Charges against Indian Philosophy as Pessimistic	Explanations & Notes
6	Charges against Indian Philosophy as Dogmatic	Explanations & Notes
7	Carvaka Epistemology	Explanations & Notes
8	Carvaka Metaphysics	Explanations & Notes
9	Carvaka Ethics	Explanations & Notes

DIGBOI COLLEGE, DIGBOI
COURSE PLAN

Name of Teacher: Bisti Ram Narzary
Course : Honours/Generic – Honours
Class/Semester : 5th Semester (H)
Paper Code : C12, Name of the paper—Existentialism and Phenomenology
Unit Assigned : Unit-I & Unit IV
Marks Assigned : 28

Class	Topic/Unit	Remarks
1	Nature of Phenomenology	Explanations
2	Important features of Phenomenology	Explanations & Notes
3	Main approaches of Phenomenology	Explanations & Notes
4	Salient features of Existentialism	Explanations & Notes
5	Theistic and Atheistic Existentialism	Explanations & Notes
6	Existence and Essence (J.P Sartre)	Explanations & Notes
7	Human Freedom (Sartre)	Explanations & Notes
8	Humanism (Sartre)	Explanations & Notes

DIGBOI COLLEGE, DIGBOI
COURSE PLAN

Name of Teacher: Bisti Ram Narzary
Course : Honours/Generic – Honours
Class/Semester : 5th Semester (H)
Paper Code : DSE-2, Name of the paper: Meta-Ethics
Unit Assigned : Full Paper
Marks Assigned : 80

Class	Topic/Unit	Remarks
1	Introduction of Meta-Ethics	Explanations
2	Nature of Meta Ethics	Notes
3	Scope of Meta-Ethics	Explanations & Notes
4	G.E Moore's Concept of Good	Explanations & Notes
5	Naturalistic Fallacy	Explanations & Notes
6	Emotivism of A.J Ayer	Explanations & Notes
7	Emotivism of C.L Stevension	Explanations & Notes
8	Prescriptivism of R.M Hare	Explanations & Notes

DIGBOI COLLEGE, DIGBOI

Course Plan August, 2022

Name of the Teacher- Dr. Anamika Neog

Course – Generic – HISGE1

Class/Semester-1

Name of the Paper-History of Assam 1228-1826

Units Assigned- Unit III (3.03)- Unit V

Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Post-Saraighat Assam- Debera Hazarika	Text Books:
2.	Atan Bargohain, Laluk Sola Barphukan	English: Baruah, S.L. –A Comprehensive History of Assam Gait, E.A.- A History of Assam
3.	Ascendancy of the Tungkhungia dynasty-the reign of Gadadhar Singha	Assamese: Baruah, Surajit Boruah,Nirode-Asomar Itihas,2nd edition (revised) Nath,D. –Asam Buranji, Revised and enlarged edition
4.	Ahom rule at its zenith-the reign of Rudra Singha	
5.	Rajeshwar Singha (1751-1769)	
6.	Background of the Moamariya Rebellion	
7.	Lakshmi Singha (1769-1780)	

8.	The Moamariya Rebellion	
9.	Gaurinath Singha(1780-1795)	
10.	Decline and fall of the Ahom Kingdom	
11.	The Burmese invasions	
12.	The East India company in Assam politics- the Treaty of Yandabo and Assam	
13.	Ahom system of administration	
14.	The Paik System	
15.	Ahom policy towards the neighbouring hill tribes;	
16.	Society in Assam under the Ahoms	
17.	Caste and class structures	
18.	The Neo-Vaishnavite Movement-background	
19.	The Neo-Vaishnavite Movement- its implications	
20.	Sankardev and the Neo-Vaishnavite Movement	

DIGBOI COLLEGE, DIGBOI

Course Plan -August, 2022

Name of the Teacher-Dr. Anamika Neog

Course – Generic – HISGE3

Class/Semester-111

Name of the Paper- History of India 1526 to 1947

Units Assigned- Unit III (3.02)- Unit V

Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Expansion and consolidation of the British rule in India upto 1857- Conflict with the Marathas	Text Books:
2.	Expansion and consolidation of the British rule in India upto 1857- Conflict with Mysore, Awadh, Punjab and Sindh	English: Banerjee,A.C.- History of India Chandra, S.- Medieval India From Sultanat to Mughals (1526-1748
3.	Administrative developments upto 1857	Assamese: Barua, P.K. Hussain, T.A.- Bharat Buranji Goswami, S.D. - Bharat Buranji
4.	Socio- economic reform upto 1857	
5.	Revolt of 1857 and its aftermath	
6.	Post 1858 administrative developments till 1919;	
7.	Socio- religious reform movements in the post 1857 period	
8.	Growth of press and rise of national consciousness	
9.	Freedom struggle upto 1919- Partition of Bengal and the Swadeshi Movement,;	
10.	Home Rule League	

11.	Rise of Muslim of Muslim Politics	
12.	Freedom Struggle from 1919 to 1939- Gandhi in politics	
13.	Khilafat and Non- Cooperation Movement	
14.	Civil Disobedience Movement	
15.	Government of India Act, 1935	
16.	Rise of Communalism, revolutionary terrorism	
17.	Trade unionism and Leftist politics	
18.	Cripps Mission- Quit India Movement- Second World War-INA	
19.	Post- War Development- Cabinet Mission	
20.	Transfer of power	

DIGBOI COLLEGE, DIGBOI

Course Plan August 2022 to November 2022

Name of the Teacher- Partha Kr Narah
Course –Generic – HISGE1
Class/Semester-I
Name of the Paper-History of Assam 1228-1826
Units Assigned- Unit III (3.03)-Unit V
Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Sources: Archaelogiclogical epigraphic literary, numismatic and account of the foreign travellers	Baruah, S.L. –A Comprehensive History of Assam
2.	Political conditions of the Brahmaputra Valley at the time of the advent of the Ahoms	English: Baruah, S.L. –A Comprehensive History of Assam Gait, E.A.- A History of Assam
3.	Sukapha and his foundation of the kingdom-An assessment	Do
4.	State formation in the Brahmaputra Valley-the Chutiya, Kachari and the Koch State	Do
5.	Expansion of the Ahom Kingdom in the 16th century-Conquests of the Neighbouring States and Territories	Do
6.	Political Developments in the 17th century- Reign of Pratap Singha	Do
7.	Administrative Developments	Do
8.	The Ahom-Mughal Relations in the Second half of the 17th Century Wars – Mir Jumla's Assam Invasion	Do
9.	The Battle of Saraighat and its Consequences	Do

DIGBOI COLLEGE, DIGBOI

Course Plan August 2022 to November 2022

Name of the Teacher-Partha Kr Narah
Course –Generic
Class/Semester III
Name of the Paper- History of India 1526 to 1947
Units Assigned- Unit III (3.02)-Unit V
Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Political Conditions in Northern India in the beginning of the 16th century- The Afghan Empire and the Mughals- Resistance vs. Struggle for Hegemony	Text Books: Banerjee,A.C.- History of India Chandra, S.- Medieval India From Sultanat to Mughals (1526-1748
2.	The Age of the Mughals- Foundation of the Mughal Empire- Humayun and His struggle- Conflict with Sher Shah	Do
3.	Akbar to Aurangzeb- Political Supremacy and Administrative Developments	Do
4.	The later Mughals and the Decline of the Mughal Empire	Do
5.	Rise of the Marathas in the Deccan- Sivaji and His career	Do
6.	Society, Economy, Religion and Culture under the Mughals	Do
7.	Beginning of the European Settlements in India–the Portuguese –the Dutch –the French and the English.	Do

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 101: Biological Chemistry and Molecular Biology**

Units Assigned – Unit 1 & 3

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	Unit 1: Structure and functions of carbohydrates	
2.	Unit 1 Structure and functions of carbohydrates	
3.	Unit 1: Structure and functions of lipids	
4.	Unit 1 Structure and functions of proteins	
5.	Unit 1: Structure and functions of amino acid	
6.	Unit 1: Structure and functions of amino acid	
7.	Unit 1: Levels and structural organization of proteins	
8.	Unit 1: Levels and structural organization of proteins.	
9.	Unit 3: Enzymes: classification	
10.	Unit 3: Enzymes: properties	
11.	Unit 3: Mechanism of enzyme action	
12.	Unit 3: Factors affecting enzyme activity	
13.	Unit 3: Michaelis-Menten equation	
14.	Unit 3: Line-weaver & Burk plot	
15.	Unit 3: significance of Km; Enzyme inhibition;	
16.	Unit 3: Cofactors and coenzymes; Biosensors	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 102: CELL BIOLOGY & GENETICS**

Units Assigned – Unit 2

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	Unit 2: Cell-cycle: phases of cell cycle	
2.	Unit 2: Cell-cycle: checkpoints and regulators of cell cycle progression	
3.	Unit 2: Cell-cycle: checkpoints and regulators of cell cycle progression	
4.	Unit 2: Cell-cycle: Programmed cell death	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper - **LSD106: A. BIOCHEMISTRY-I INTERMEDIARY METABOLISM**

Units Assigned – Unit 5, Unit 6

Marks Assigned – 20 out of 60

Class	Topic/ Unit	Remarks
1.	Unit 5: Metabolism of Purines and Pyrimidines, its regulation	
2.	Unit 5: Metabolism of Purines and Pyrimidines, its regulation	
3.	Unit 6: Interrelationship of carbohydrate, lipid and protein metabolism, Inborn errors of metabolism	
4.	Unit 6: Interrelationship of carbohydrate, lipid and protein metabolism, Inborn errors of metabolism	
5.	Unit 6: Interrelationship of carbohydrate, lipid and protein metabolism, Inborn errors of metabolism	
6.	Unit 6: Interrelationship of carbohydrate, lipid and protein metabolism, Inborn errors of metabolism	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper - **LSC 301: ANIMAL PHYSIOLOGY**

Units Assigned – Unit 2

Marks Assigned – 8 out of 45

Class	Topic/ Unit	Remarks
1.	**Unit 2:** Types and comparative anatomy of heart in vertebrate	
2.	**Unit 2:** Cardiac cycle and its regulation	
3.	**Unit 2:** Blood pressure and heart diseases	
4.	**Unit 2:** Blood pressure and heart diseases	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper - **LSC 302: IMMUNOLOGY**

Units Assigned – Unit 3

Marks: 08 out of 45

Class	Topic/ Unit	Remarks
1.	**Unit 3:** Complement system: characteristic features	
2.	**Unit 3: A**ctivation pathways and its biological consequences	
3.	**Unit 3: S**tructure and function of MHC I and MHC II molecules	
4.	**Unit 3: S**tructure and function of MHC I and MHC II molecules	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper – **LSC 303: DEVELOPMENTAL BIOLOGY**

Units Assigned – Unit 1

Marks: 08 out of 45

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	**Unit 1:** Gamatogenesis: Cells in the seminiferous tubules; formation of spermatids	
2.	**Unit 1:** Gamatogenesis: differentiation of the spermatozoa; Oogenesis - growth of the oocytes	
3.	**Unit 1:** Gamatogenesis: Nuclear activity during the growth of the oocyte; accumulation of food reserves in the cytoplasm of the oocytes	
4.	**Unit 1:** Gamatogenesis: In vitro oocyte maturation; hormonal control of gametogenesis	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 101: Biological Chemistry and Molecular Biology**

Units Assigned – Unit 1 & 3

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	Unit 1: Structure and functions of carbohydrates	
2.	Unit 1 Structure and functions of carbohydrates	
3.	Unit 1: Structure and functions of lipids	
4.	Unit 1 Structure and functions of proteins	
5.	Unit 1: Structure and functions of amino acid	
6.	Unit 1: Structure and functions of amino acid	
7.	Unit 1: Levels and structural organization of proteins	
8.	Unit 1: Levels and structural organization of proteins.	
9.	Unit 3: Enzymes: classification	
10.	Unit 3: Enzymes: properties	
11.	Unit 3: Mechanism of enzyme action	
12.	Unit 3: Factors affecting enzyme activity	
13.	Unit 3: Michaelis-Menten equation	
14.	Unit 3: Line-weaver & Burk plot	
15.	Unit 3: significance of Km; Enzyme inhibition;	
16.	Unit 3: Cofactors and coenzymes; Biosensors	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 102: CELL BIOLOGY & GENETICS**

Units Assigned – Unit 2

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	Unit 2: Cell-cycle: phases of cell cycle	
2.	Unit 2: Cell-cycle: checkpoints and regulators of cell cycle progression	
3.	Unit 2: Cell-cycle: checkpoints and regulators of cell cycle progression	
4.	Unit 2: Cell-cycle: Programmed cell death	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper - **LSD106: A. BIOCHEMISTRY-I INTERMEDIARY METABOLISM**

Units Assigned – Unit 5, Unit 6

Class	Topic/ Unit	Remarks
1.	Unit 5: Metabolism of Purines and Pyrimidines, its regulation	
2.	Unit 5: Metabolism of Purines and Pyrimidines, its regulation	
3.	Unit 6: Interrelationship of carbohydrate, lipid and protein metabolism, Inborn errors of metabolism	
4.	Unit 6: Interrelationship of carbohydrate, lipid and protein metabolism, Inborn errors of metabolism	
5.	Unit 6: Interrelationship of carbohydrate, lipid and protein metabolism, Inborn errors of metabolism	
6.	Unit 6: Interrelationship of carbohydrate, lipid and protein metabolism, Inborn errors of metabolism	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Moni Kankana Kalita**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 101: Biological Chemistry and Molecular Biology**

Units Assigned – Unit 4 & 6

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 4:** Nucleic acid as genetic material; structure, properties and types of DNA (A, B and Z)	
2.	**Unit 4:** RNA (hn RNA, mRNA, tRNA and rRNA)	
3.	**Unit 4:** C- value Paradox; Genome organization in 'prokaryotes' and eukaryotes; Structural and regulatory genes	
4.	**Unit 4:** DNA replication: semiconservative, enzymology of DNA replication	
5.	**Unit 4:** Basic concept of end replication problem and DNA synthesis by reverse transcriptase	
6.	**Unit 4:** Regulation of gene expression in 'prokaryotes'; operon concept, structure and function of lac.operon.	
7.	**Unit 6:** Polymerase chain reaction (PCR)	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Moni Kankana Kalita**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 102: CELL BIOLOGY & GENETICS**

Units Assigned – Unit 3

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 3:** Carcinogens and mechanisms of carcinogenesis	
2.	**Unit 3:** Properties of cancer cells	
3.	**Unit 3:** Tumor viruses, oncogenes and suppressor genes	
4.	**Unit 3:** Tumor viruses, oncogenes and suppressor genes	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Moni Kankana Kalita**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper - **LSC103: TECHNIQUE IN BIOLOGY, BIOSTATISTICS & BIOINFORMATICS**

Units Assigned – Unit 4

Marks Assigned – 06 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 4:** Sampling of statistical data; Central tendencies and dispersions	
2.	**Unit 4:** Sampling of statistical data; Central tendencies and dispersions	
3.	**Unit 4:** Sampling of statistical data; Central tendencies and dispersions	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Moni K. Kalita**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 101: Biological Chemistry and Molecular Biology**

Units Assigned – Unit 4 & 6

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 4:** Nucleic acid as genetic material; structure, properties and types of DNA (A, B and Z)	
2.	**Unit 4:** RNA (hn RNA, mRNA, tRNA and rRNA)	
3.	**Unit 4:** C- value Paradox; Genome organization in 'prokaryotes' and eukaryotes; Structural and regulatory genes	
4.	**Unit 4:** DNA replication: semiconservative, enzymology of DNA replication	
5.	**Unit 4:** Basic concept of end replication problem and DNA synthesis by reverse transcriptase	
6.	**Unit 4:** Regulation of gene expression in 'prokaryotes'; operon concept, structure and function of lac.operon.	
7.	**Unit 6:** Polymerase chain reaction (PCR)	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Moni Kankana Kalita**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 102: CELL BIOLOGY & GENETICS**

Units Assigned – Unit 3

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 3:** Carcinogens and mechanisms of carcinogenesis	
2.	**Unit 3:** Properties of cancer cells	
3.	**Unit 3:** Tumor viruses, oncogenes and suppressor genes	
4.	**Unit 3:** Tumor viruses, oncogenes and suppressor genes	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Moni Kankana Kalita**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper - **LSC103: TECHNIQUE IN BIOLOGY, BIOSTATISTICS & BIOINFORMATICS**

Units Assigned – Unit 4

Marks Assigned – 06 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 4:** Sampling of statistical data; Central tendencies and dispersions	
2.	**Unit 4:** Sampling of statistical data; Central tendencies and dispersions	
3.	**Unit 4:** Sampling of statistical data; Central tendencies and dispersions	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Moni Kankana Kalita**

Course – M.Sc in Life Sciences

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper – **LSC 301: Animal Physiology**

Units Assigned – Unit 2

Marks: 08 out of 45

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	**Unit 2:** Physical and chemical composition of blood	
2.	**Unit 2:** Blood groups	
3.	**Unit 2:** Blood coagulation	
4.	**Unit 2:** Blood volume and its regulation	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- - **Dr. Moni Kankana Kalita**

Course – M.Sc in Life Sciences

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper – **LSC 302: Immunology**

Units Assigned – Unit 2

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 2:** Immunoglobulin: molecular structure	
2.	**Unit 2:** Immunoglobulin: Classes and functions	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Dr. Moni Kankana Kalita**

Course – M.Sc in Life Sciences

Class/Semester – 3rd Semester **(CBCS)**

Name of the Paper – **LSC 303: Developmental Biology**

Units Assigned – Unit 2

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 2:** Changes in the organization of the egg cytoplasm caused by fertilization	
2.	**Unit 2:** In vitro fertilization	

DIGBOI COLLEGE, DIGBOI

Course Plan : 2022-2023

Name of the Teacher- Aparajita Gogoi

Course –M. Sc

Class/Semester- 3rd Semester (CBCS)

Name of the Paper-LSC 301 – Animal Physiology

Units Assigned-Unit 3

Marks Assigned- 7 /45

Class	Topic/ Unit	Remarks
1.	Unit 3: Generation of impulse- resting and action potentials; transmission of impulse ; axonal , synaptic and neuromuscular transport of neuronal cells	

DIGBOI COLLEGE, DIGBOI

Course Plan : 2022-2023

Name of the Teacher- Aparajita Gogoi

Course –M. Sc

Class/Semester- 3rd Semester (CBCS)

Name of the Paper-LSC 302 – Immunology

Units Assigned-Unit 2

Marks Assigned- 7 /45

Class	Topic/ Unit	Remarks
1.	Unit 2 : Antigen quantification, by RID, RIA, ELISA	

DIGBOI COLLEGE, DIGBOI

Course Plan : 2021-2022

Name of the Teacher- Aparajita Gogoi

Course –M. Sc

Class/Semester-1st Semester (CBCS)

Name of the Paper-LSC 101 – Biological Chemistry and Molecular Biology

Units Assigned-Unit 2

Marks Assigned- 8 /45

Class	Topic/ Unit	Remarks
1.	Unit 1: Chemical bonds –types and features	
2.	Law of Thermodynamics	
3.	Concept of free energy in biological system, high energy compounds and their biological significance	
4.	Unit 2: Concept of electron transport system & ATP synthesis	
5.	Oxidative phosphorylation –substrate level	

DIGBOI COLLEGE, DIGBOI

Course Plan : 2021-2022

Name of the Teacher- Aparajita Gogoi

Course –M. Sc

Class/Semester-1st Semester (CBCS)

Name of the Paper-LSC 102 – Cell Biology and Genetics

Units Assigned-Unit 2

Marks Assigned- 8 /45

Class	Topic/ Unit	Remarks
1.	Unit 2: Cellular communication- cell adhesion, role of different adhesion molecules	
2.	Cell signalling; signalling molecules	
3.	Receptors of cell signalling; second messengers, mechanism of signal transduction	

DIGBOI COLLEGE, DIGBOI

Course Plan : 2021-2022

Name of the Teacher- Aparajita Gogoi

Course –M. Sc

Class/Semester-1st Semester (CBCS)

Name of the Paper-LSC 106 – Entomology-1 Insect Diversity and Evolution

Units Assigned-Unit 2

Marks Assigned- 8 /45

Class	Topic/ Unit	Remarks
1.	3: Classification of economically important groups upto super family	
2.	6. Insect societies- Groups of social insects and their societies, honey bees, aphids	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Miss. Priyanka Debnath**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 101: Biological Chemistry and Molecular Biology**

Units Assigned – Unit 2 & 4

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	Unit 2: Glycolysis	
2.	Unit 2: Substrate level phosphorylation	
3.	Unit 2: Gluconeogenesis	
4.	Unit 2: Cori cycle	
5.	Unit 2: Oxidative decarboxylation of Pyruvic acid & PDH complex	
6.	Unit 2: Krebs cycle and its energetics	
7.	Unit 2: Amphibolic pathways & Anaplerotic reaction of Krebs cycle	
8.	Unit 2: Urea Cycle & its link with kreb's cycle	
9.	Unit 2: Omega-oxidation of fatty acids	
10.	Unit 2: Synthesis of fatty acid (Palmitate)	
11.	Unit 2: Oxidative deamination, decarboxylation, transamination	
12.	Unit 4: Semiconservative Replication & DNA Polymerase	
13.	Unit 4: DNA Replication	
14.	Unit 4: End Replication problem	
15.	Unit 4: DNA Replication by Reverse Transcriptase	
16.	Unit 4: Structural & Regulatory genes	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Miss. Priyanka Debnath**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 102: CELL BIOLOGY & GENETICS**

Units Assigned – Unit 1

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	Unit 1: Dynamics of cytoskeletons (microfilaments)	
2.	Unit 1: Role of actin & microtubule cytoskeleton in cell shape, intracellular motility	
3.	Unit 1: Role of actin & microtubule cytoskeleton in mitosis & locomotion	
4.	Unit 1: Functions of intermediate filaments	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Miss. Priyanka Debnath**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 103: TECHNIQUE IN BIOLOGY & BIOSTATISTICS & BIOINFORMATICS**

Units Assigned – Unit 4

Marks Assigned – 6 out of 60

Class	Topic/ Unit	Remarks
1.	Unit 4: Basic probability concepts	
2.	Unit 4: Theoretical distributions (binomial)	
3.	Unit 4: Theoretical distributions (poisson)	
4.	Unit 4: Theoretical distributions (normal)	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Miss. Priyanka Debnath**

Course – M.Sc in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper - **LSD106: A. BIOCHEMISTRY-I INTERMEDIARY METABOLISM**

Units Assigned – Unit 1, 2, 3, 5, 6,

Marks Assigned : 40 out of 60

Class	Topic/ Unit	Remarks
1.	Unit 1: Types and features of biochemical reactions	
2.	Unit 1: Bioenergietics: redox reaction, redox potential and free energy	
3.	Unit 1: oxidative and photophosphorylation and their mechanism	
4.	Unit 1: Structure of ATPase and Chemiosmotic theory of ATP synthesis	
5.	Unit 2: Metabolism of Carbohydrates: Regulation of Glycolysis	
6.	Unit 2: Metabolism of Carbohydrates: Regulation of Kreb's Cycle	
7.	Unit 2: Metabolism of Carbohydrates: Regulation of HMP pathway	
8.	Unit 2: Metabolism of Carbohydrates: Regulation of glycogenesis	
9.	Unit 2: Metabolism of Carbohydrates: Regulation of glycogenolysis	
10.	Unit 2: Metabolism of Carbohydrates: Regulation of Glyoxylate cycle	
11.	Unit 3: Lipids: β oxidation of saturated and unsaturated fatty acids	
12.	Unit 3: ω– oxidation; metabolismof ketone bodies	
13.	Unit 3: biosynthesis of saturated fatty acids, its regulation	
14.	Unit 3: metabolism of eicosanoids and cholesterol.	
15.	Unit 5: Metabolism of Purines and Pyrimidines, its regulation	
16.	Unit 6: Interrelationship of carbohydrate, lipidnand protein	

	metabolism,	
17.	Unit 6: Inborn errors of metabolism	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss. Priyanka Debnath**

Course – M.Sc in Life Sciences

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper - **LSC 301: ANIMAL PHYSIOLOGY**

Units Assigned – Unit 1

Marks Assigned – 8 out of 45

Class	Topic/ Unit	Remarks
1.	**Unit 1:** Types , structure & function of nephrons	
2.	**Unit 1:** Renal Blood Flow , Glomerular Filtration & their control	
3.	**Unit 1:** Tubular reabsorption and secretion	
4.	**Unit 1:** Concentration of Urine	
5.	**Unit 1:** Osmoregulation & Acid base balance	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss. Priyanka Debnath**

Course – M.Sc in Life Sciences

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper - **LSC 302: IMMUNOLOGY**

Units Assigned – Unit 2

Marks: 08 out of 45

Class	Topic/ Unit	Remarks
1.	**Unit 2:** Immunoglobulin: molecular structure, classes & functions	
2.	**Unit 2:** Ig gene Arrangement	
3.	**Unit 2:** RID	
4.	**Unit 2:** RIA	
5.	**Unit 2:** ELISA	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss. Priyanka Debnath**

Course – M.Sc in Life Sciences

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper – **LSC 303: DEVELOPMENTAL BIOLOGY**

Units Assigned – Unit 3

Marks: 08 out of 45

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	**Unit 3:** Properties of cleavage & chemical changes during cleavage	
2.	**Unit 3:** Totipotency and nuclear transfer experiments	
3.	**Unit 3:** Distribution of cytoplasmic substances in the egg during cleavage	
4.	**Unit 3:** Morphogenetic gradients of egg cytoplasm	
5.	**Unit 3:** Concepts of determination: competence and induction	
6.	**Unit 3:** Mechanism of action of the inducing substances	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss. Priyanka Debnath**

Course – M.Sc in Life Sciences

Class/Semester – 3rd Semester **(CBCS)**

Name of the Paper – **LSD306: C. BIOCHEMISTRY –III (MOLECULAR BIOLOGY)**

Units Assigned –Unit 1, 4, 5

Marks Assigned – 40 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 5:** Clonal Selection Theory	
2.	**Unit 5:** Hybridoma Technology & production of monoclonal antibodies	
3.	**Unit 5:** Heavy & Light chain gene of Ig	
4.	**Unit 5:** Molecular basis of diversity (Gene arrangement)	
5.	**Unit 4:** DNA damage & repair- Mutagens	
6.	**Unit 4:** DNA damage & repair- BER, NER	
7.	**Unit 4:** DNA damage & repair- Thymine Dimer	
8.	**Unit 4:** DNA damage & repair- Recombination error	
9.	**Unit 4:** DNA damage & repair- SOS repair	
10.	**Unit 1:** Organisation of DNA in chromosomes	
11.	**Unit 1:** Molecular structure, physiochemical properties of DNA	
12.	**Unit 1:** DNA replication	
13.	**Unit 1:** DNA polymerase in Prokaryote	
14.	**Unit 1:** DNA polymerase in eukaryote	
15.	**Unit 1:** DNA sequencing	
16.	**Unit 1:** Satellite DNA	
17.	**Unit 1:** Palindrome sequence & repetitive DNA	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss Priyanka Debnath**

Course – M.Sc. in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 101: Biological Chemistry and Molecular Biology**

Units Assigned – Unit 2 & 4

Marks Assigned – 15 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 2:** Cori cycle	
2.	**Unit 2:** Glycolysis	
3.	**Unit 2:** Gluconeogenesis	
4.	**Unit 2:** Krebs cycle	
5.	**Unit 2:** Oxidative deamination, decarboxylation, transamination	
6.	**Unit 2:** Urea cycle	
7.	**Unit 2:** β-oxidation of fatty acids	
8.	**Unit 2:** Synthesis of fatty acids (Palmitate)	
9.	**Unit 4:** Nucleic acid as genetic material	
10.	**Unit 4:** Properties and types of DNA (A, B and Z) & C- value Paradox	
11.	**Unit 4:** Types of RNA	
12.	**Unit 4:** Structural and regulatory genes	
13.	**Unit 4:** DNA replication: semiconservative, enzymology of DNA replication	
14.	**Unit 4:** Basic concept of end replication problem	
15.	**Unit 4:** DNA synthesis by reverse transcriptase	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss. Priyanka Debnath**

Course – M.Sc. in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 102: CELL BIOLOGY & GENETICS**

Units Assigned – Unit 1

Marks Assigned – 7 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 1**: Dynamics of microfilaments	
2.	**Unit 1**: Role of actin & microtubule cytoskeleton in cell shape intracellular motility, mitosis & locomotion	
3.	**Unit 1**: Functions of intermediate filament	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss. Priyanka Debnath**

Course – M.Sc. in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper – **LSC 103: TECHNIQUES IN BIOLOGY, BIOSTATISTICS & BIOINFORMATICS**

Units Assigned – Unit 4

Marks Assigned – 12 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 1**: Sampling of statistical data	
2.	**Unit 1**: Central tendencies	
3.	**Unit 1**: Dispersion of central tendencies	
4.	**Unit 1**: Basic probability concepts	
5.	**Unit 1**: Theoretical distributions (binomial, poisson and normal distribution)	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss Priyanka Debnath**

Course – M.Sc. in Life Sciences

Class/Semester –1st Semester **(CBCS)**

Name of the Paper - **LSD106: A. BIOCHEMISTRY-I INTERMEDIARY METABOLISM**

Units Assigned – Unit 1,2,3,4,5,6

Marks Assigned – 60 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 1:** Types and features of biochemical reactions	
2.	**Unit 1:** Bioenergetics	
3.	**Unit 1:** Redox reaction, redox potential and free energy	
4.	**Unit 1:** Oxidative Phosphorylation	
5.	**Unit 1:** Oxidative Phosphorylation	
6.	**Unit 1:** Photophosphorylation	
7.	**Unit 1:** Structure of ATPase and Chemiosmotic theory of ATP synthesis	
8.	**Unit 2:** Regulation of Glycolysis	
9.	**Unit 2:** Regulation of Kreb's Cycle	
10.	**Unit 2:** Regulation of HMP pathway	
11.	**Unit 2:** Regulation of glycogenesis	
12.	**Unit 2:** Regulation of glycogenolysis	
13.	**Unit 2:** Regulation of Glyoxylate cycle	
14.	**Unit 3:** β oxidation of saturated fatty acids	
15.	**Unit 3:** β oxidation of unsaturated fatty acids	
16.	**Unit 3**: ω– oxidation	
	Unit 3: Regulation of fatty acid metabolism	

	Unit 3: Metabolism of eicosanoids and cholesterol	
	Unit 4: Metabolism of amino acids phenylalanine	
	Unit 4: Metabolism of amino acids histidine	
	Unit 4: Metabolism of amino acids tryptophan	
	Unit 4: Metabolism of amino acids Arginine	
	Unit 5: Metabolism of purine & its regulation	
	Unit 5: Metabolism of pyrimidine & its regulation	
	Unit 6: Interrelationship of carbohydrate, lipid and protein metabolism	
	Unit 6: Inborn Error in Metabolism	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss Priyanka Debnath**

Course – M.Sc. in Life Sciences

Class/Semester –3nd Semester **(CBCS)**

Name of the Paper – **LSC301 Z: ANIMAL PHYSIOLOGY**

Units Assigned –Unit 1

Marks Assigned – 16 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 1:** Respiratory pigments	
2.	**Unit 1:** Exchange of Gases	
3.	**Unit 1:** Transport of oxygen	
4.	**Unit 1:** Transport of carbon dioxide	
5.	**Unit 1:** Hypoventilation & Hyperventilation	
6.	**Unit 1:** Structure & types of Nephrons	
7.	**Unit 1:** Glomerular membrane, Different pressures affecting GFR	
8.	**Unit 1:** Role of hormone in urine formation	
9.	**Unit 1:** Role of hormone in urine formation	
10.	**Unit 1:** Role of hormone in urine formation	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Miss Priyanka Debnath**

Course – M.Sc. in Life Sciences

Class/Semester –3nd Semester **(CBCS)**

Name of the Paper – **LSC 302 Z: IMMUNOLOGY**

Units Assigned –Unit 1,2

Class	Topic/ Unit	Remarks
1.	**Unit 1:** Clonal nature of immune response	
2.	**Unit 1:** Monoclonal and Polyclonal antibody	
3.	**Unit 1:** Antigens - characteristics, antigenicity and immunogenicity	
4.	**Unit 1:** Factors affecting immunogenicity, epitopes, haptanes, adjuvants, superantigens.	
5.	**Unit 2:** Immunoglobulin: molecular structure, classes and functions	
6.	**Unit 2:** Ig gene arrangements	
7.	**Unit 2:** Antigen-antibody interactions	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss Priyanka Debnath**

Course – M.Sc. in Life Sciences

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper - **LSC 303 Z: DEVELOPMENTAL BIOLOGY**

Units Assigned – Unit 2,3

Marks Assigned – 15 out of 45

Class	Topic/ Unit	Remarks
1.	**Unit 2:** Fertilisation in Sea-Urchin	
2.	**Unit 2:** Fertilisation in Sea-Urchin	
3.	**Unit 2:** Fertilisation in Mammals	
4.	**Unit 2:** Fertilisation in Mammals	
5.	**Unit 2:** Components of the spermatozoon in the egg interior	
6.	**Unit 3:** Properties of Cleavage	
7.	**Unit 3:** Chemical changes during cleavage	
8.	**Unit 3:** Totipotency and nuclear transfer experiments	
9.	**Unit 3:** Distribution of cytoplasmic substances in the egg during cleavage	
10.	**Unit 3:** Morphogenetic gradients in the egg cytoplasm	
11.	**Unit 3:** Concepts of determination: mechanism of cellular determination	
12.	**Unit 3:** Competence and induction: mechanism of action of the inducing substances.	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Miss Priyanka Debnath**

Course – M.Sc. in Life Sciences

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper - **LSC 306: A. BIOCHEMISTRY-III**

Units Assigned – Unit 1,2,3,4,5,6

Marks: 60 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 1:** Organisation of DNA in chromosomes	
2.	**Unit 1:** Molecular structure, physico-chemical properties of DNA	
3.	**Unit 1:** DNA polymerase in Prokarytes and Eukaryotes	
4.	**Unit 1:** DNA-replication	
5.	**Unit 1:** DNA-replication	
6.	**Unit 1:** DNA sequencing	
7.	**Unit 1:** Satellite DNA, Palindrome sequences, repetitive DNA	
8.	**Unit 2:** Organisation of gene in Prokaryotes and Eukaryotes	
9.	**Unit 2:** Split genes, Overlaping genes, pseudogenes	
10.	**Unit 2:** Transposable genetic elements	
11.	**Unit 2:** Plasmids	
12.	**Unit 2:** Regulation of prokaryotic gene expression - inducible operon systems	
13.	**Unit 2:** Regulation of prokaryotic gene expression - repressible operon systems	
14.	**Unit 2:** Concept of eukaryotic gene expression and its difference with prokaryotic	
15.	**Unit 2:** Regulation of gene expression at transcription level	
16.	**Unit 2:** Regulation of gene expression at translation level	
17.	**Unit 3:** Sense and antisense strand, RNA polymerase in Procaryotes and Eukaryotes	
18.	**Unit 3:** Transcription of RNA	
19.	**Unit 3:** Types and functions of RNA	
20.	**Unit 3:** RNA processing	
21.	**Unit 3:** Spliceosome catalysed RNA splicing	
22.	**Unit 3:** Ribozyme	
23.	**Unit 3:** RNA editing	
24.	**Unit 3:** RNA sequencing	
25.	**Unit 3:** Reverse transcriptase and its significance	
26.	**Unit 4:** DNA damage	
27.	**Unit 4:** BER in prokaryotes & eukaryotes	

28.	**Unit 4:** NER in prokaryotes & eukaryotes	
29.	**Unit 4:** Recombination repair,	
30.	**Unit 4:** SOS repair	
31.	**Unit 5:** Clonal selection theory	
32.	**Unit 5:** Hybridoma technology and production of monoclonal antibodies	
33.	**Unit 5:** Heavy and light chain gene of Ig	
34.	**Unit 5:** Molecular basis of diversity	
35.	**Unit 5:** Interferons - Type and mechanism of action	
36.	**Unit 6:** Recombinant DNA technology	
37.	**Unit 6:** Importance of microorganisms in recombinant DNA technology	
38.	**Unit 6:** PCR	
39.	**Unit 6:** DNA finger printing	
40.	**Unit 6:** Transfer of genetic material (transformation, conjugation and transduction)	
41.	**Unit 6:** Transfer of genetic material (transformation, conjugation and transduction)	
42.	**Unit 6:** Restriction enzymes	
43.	**Unit 6:** Principle and methods of gene cloning and genetic engineering	
44.	**Unit 6:** cDNA and gene targeting	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – Honours

Class/Semester –1st Semester **(CBCS)**

Name of the Paper - Core Course I: Non-Chordates I: Protists to Pseudocoelomates

Units Assigned – Unit 1: Protista, Parazoa and Metazoa

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 1: General characteristics and Classification up to Classes	
2.	Unit 1: General characteristics and Classification up to Classes	
3.	Unit 1: Structural organization & nutrition of Euglena	
4.	Unit 1: Structural organization & nutrition of Euglena	
5.	Unit 1: Structural organization & nutrition of Amoeba	
6.	Unit 1: Structural organization & nutrition of Amoeba	
7.	Unit 1: Structural organization & nutrition of Paramoecium	
8.	Unit 1: Structural organization & nutrition of Paramoecium	
9.	Unit 1: Life cycle and pathogenicity of Plasmodium vivax	
10.	Unit 1: Life cycle and pathogenicity of Plasmodium vivax	
11.	Unit 1: Locomotion and Reproduction in Animal protista	

12.	Unit 1: Locomotion and Reproduction in Animal protista	
13.	Unit 1: Locomotion and Reproduction in Animal protista	
14.	Unit 1: Locomotion and Reproduction in Animal protista	
15.	Unit 1: Evolution of symmetry and segmentation of Metazoa	
16.	Unit 1: Evolution of symmetry and segmentation of Metazoa	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – Honours

Class/Semester –1st Semester **(CBCS)**

Name of the Paper - CORE COURSE II: PRINCIPLES OF ECOLOGY

Units Assigned – Unit 1 and Unit 2

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 1: Introduction to Ecology History of ecology, Autecology and synecology	
2.	Unit 1: Introduction to Ecology Levels of organization	
3.	Unit 1: Introduction to Ecology Laws of limiting factors,	
4.	Unit 1: Introduction to Ecology Study of abiotic factors	
5.	Unit 1: Introduction to Ecology Study of abiotic factors	
6.	Unit 2: Population Unitary and Modular populations	
7.	Unit 2: Population Unique and group attributes of population: Density, natality, mortality	
8.	Unit 2: Population life tables	
9.	Unit 2: Fecundity tables	
10.	Unit 2: Survivorship curves,	
11.	Unit 2: Population age ratio, sex ratio, dispersal and dispersion strategies	
12.	Unit 2: Population Exponential and logistic growth, equation and patterns, r and K	
13.	Unit 2: Population Exponential and logistic growth, equation and patterns, r and K	
14.	Unit 2: Population Exponential and logistic growth, equation and patterns, r and K	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – Generic

Class/Semester –1st Semester **(CBCS)**

Name of the Paper - GE II: ANIMAL DIVERSITY

Units Assigned – Unit 1, Unit 5, Unit 9 and Unit 10

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 1. Protista: General characters of Protozoa	
2.	Unit 1. Protista: Life cycle of Plasmodium.	
3.	Unit 5. Pseudocoelomates - General characters of Nemethehelminthes	
4.	Unit 5. Pseudocoelomates - Parasitic adaptations.	
5.	Unit 9. Coelomate Deuterostomes- General characters of Echinodermata	
6.	Unit 9. Coelomate Deuterostomes- Water Vascular system in Starfish.	
7.	Unit 9. Coelomate Deuterostomes- Water Vascular system in Starfish.	
8.	Unit 10. Protochordata- Salient features	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – Hnours

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper - CORE COURSE V: DIVERSITY OF CHORDATA
Units Assigned – Unit 1, Unit 2, and Unit 3

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 1: Introduction to Chordates- General characteristics and outline classification	
2.	Unit 1: Introduction to Chordates- General characteristics and outline classification	
3.	Unit 2: Protochordata - General characteristics of Hemichordata	
4.	Unit 2: Protochordata - General characteristics of Urochordata	
5.	Unit 2: Protochordata - General characteristics of Cephalochordata	
6.	Unit 2: Protochordata - Study of larval forms in protochordates	
7.	Unit 2: Protochordata - Study of larval forms in protochordates	
8.	Unit 10. Protochordata- Retrogressive metamorphosis in Urochordata	
9.	Unit 10. Protochordata- Retrogressive metamorphosis in Urochordata	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – Hnours

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper - Core Course VI: Animal Physiology: Controlling and Coordinating Systems
Units Assigned – Unit 1 and Unit 5

Class	Topic/ Unit	Remarks
1.	Unit 1: Tissues- Structure, location, classification and functions of epithelial tissue	
2.	Unit 1: Tissues- Structure, location, classification and functions of epithelial tissue	
3.	Unit 1: Tissues - Structure, location, classification and functions of connective tissue	
4.	Unit 1: Tissues - Structure, location, classification and functions of connective tissue	
5.	Unit 1: Tissues - Structure, location, classification and functions of nervous tissue	
6.	Unit 1: Tissues - Structure, location, classification and functions of nervous tissue	
7.	Unit 5: Reproductive System - Histology of testis and ovary	
8.	Unit 5: Reproductive System - Histology of testis and ovary	
9.	Unit 5: Reproductive System - Physiology of male and female reproduction	
10.	Unit 5: Reproductive System - Physiology of male and female reproduction	
11.	Unit 5: Reproductive System - Physiology of male and female reproduction	
13.	Unit 5: Reproductive System – Puberty	
14.	Unit 5: Reproductive System - Methods of contraception in male and female	
15.	Unit 5: Reproductive System - Methods of contraception in male and female	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – Honours

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper – **Core Course VII: Fundamentals of Biochemistry**

Units Assigned – Unit 5

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 5: Enzymes- Nomenclature and classification	
2.	Unit 5: Enzymes- Nomenclature and classification	
3.	Unit 5: Enzymes - Cofactors	
4.	Unit 5: Enzymes - Specificity of enzyme action	
5.	Unit 5: Enzymes - Isozymes	
6.	Unit 5: Enzymes - Mechanism of enzyme action	
7.	Unit 5: Enzymes - Mechanism of enzyme action	
8.	Unit 5: Enzymes - Enzyme kinetics	
9.	Unit 5: Enzymes - Enzyme kinetics	
10.	Unit 5: Enzymes - Factors affecting rate of enzyme-catalyzed reactions	
11.	Unit 5: Enzymes - Factors affecting rate of enzyme-catalyzed reactions	
13.	Unit 5: Enzymes- Derivation of MichaelisMenten equation	
14.	Unit 5: Enzymes- Concept of Km and Vmax, Lineweaver-Burk plot	
15.	Unit 5: Enzymes - Multisubstrate reactions	
16.	Unit 5: Enzymes - Enzyme inhibition	
17.	Unit 5: Enzymes - Enzyme inhibition	
18.	Unit 5: Enzymes- Allosteric enzymes and their kinetics	
19.	Unit 5: Enzymes- Regulation of enzyme action.	

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – **Generic**

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper – **GE VII: HUMAN PHYSIOLOGY**

Units Assigned – Unit 3 and Unit 6

Class	Topic/ Unit	Remarks
1.	Unit 3: Respiratory Physiology Ventilation, External and internal Respiration,	
2.	Unit 3:Transport of oxygen and carbon dioxide in blood,	
3.	Unit 3:Transport of oxygen and carbon dioxide in blood	
4.	Unit 3: Factors affecting transport of gases	
5.	Unit 6: Endocrine and Reproductive Physiology Structure and function of endocrine glands (ovaries, and testes),	
6.	Unit 6: Endocrine and Reproductive Physiology Structure and function of endocrine glands (ovaries, and testes),	
7.	Unit 6: Endocrine and Reproductive Physiology Structure and function of endocrine glands (ovaries, and testes),	
8.	Unit 6: Brief account of spermatogenesis and oogenesis	
9.	Unit 6: Brief account of spermatogenesis and oogenesis	
10.	Unit 6: Menstrual cycle.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Kishor Haloi

Course –Honours / Generic – **Honours**

Class/Semester –5th Semester **(CBCS)**

Name of the Paper – **Core Course XI: Molecular Biology**

Units Assigned – Unit 4, Unit 7 and Unit 8

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 4 : Genetic code	
2.	Unit 4 :Degeneracy of the genetic code and Wobble Hypothesis and assembly in prokaryotes	
3.	Unit 4 :Process of protein synthesis in prokaryotes: Ribosome structure	
4.	Unit 4 : Fidelity of protein synthesis,	
5.	Unit 4 : Aminoacyl tRNA synthetases and charging of tRNA	
6.	Unit 4 : Proteins involved in initiation, elongation and termination of polypeptide chain	
7.	Unit 4 : Proteins involved in initiation, elongation and termination of polypeptide chain	
8.	Unit 4 :Inhibitors of protein synthesis	
9.	Unit 4 :Difference between prokaryotic and eukaryotic translation	
10.	Unit 7: DNA Repair Mechanisms Pyrimidine dimerization and mismatch repair	
11.	Unit 7: DNA Repair Mechanisms Pyrimidine dimerization and mismatch repair	
12.	Unit 8: Regulatory RNAs Concept of Ribo-switches	
13.	Unit 8: RNA interference, miRNA, siRNA	
14.	Unit 8: RNA interference, miRNA, siRNA	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Kishor Haloi

Course –Honours / Generic – **Honours**

Class/Semester –5th Semester **(CBCS)**

Name of the Paper – **Core Course XII: Principles of Genetics**

Units Assigned – Unit 6, Unit 7 and Unit 8

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 6: Polygenic Inheritance Polygenic inheritance with suitable examples; simple numericals based on it	
2.	Unit 6: Polygenic Inheritance Polygenic inheritance with suitable examples; simple numericals based on it	
3.	Unit 7: Recombination in Bacteria and Viruses Conjugation, Transformation, Transduction	
4.	Unit 7: Recombination in Bacteria and Viruses Conjugation, Transformation, Transduction,	
5.	Unit 7: Complementation test in Bacteriophage	
6.	Unit 8: Transposable Genetic Elements Transposons in bacteria	
7.	Unit 8: Transposable Genetic Elements Ac-Ds elements in maize and P elements in *Drosophila*	
8.	Unit 8: Transposable Genetic Elements Ac-Ds elements in maize and P elements in *Drosophila*	
9.	Unit 8: Transposable Genetic Elements Transposons in humans	
10.	Unit 8: Transposable Genetic Elements Transposons in humans	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Kishor Haloi

Course –Honours / Generic – **Honours**

Class/Semester –5th Semester **(CBCS)**

Name of the Paper –

Units Assigned – Unit 6, Unit 7 and Unit 8

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems - Integumentary	
2.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems - Integumentary	
3.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems - excretory	
4.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems - excretory	
5.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems -circulatory	
6.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems -circulatory	
7.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems - respiratory	
8.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems - respiratory	
9.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems -endocrine	
10.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems –endocrine	
11.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems – reproductive	
12.	Unit IV: Physiology of Insects Structure and physiology of Insect body systems – reproductive	
13.	Unit IV: Physiology of Insects - Sensory receptors and nervous system	

14.	Unit IV: Physiology of Insects - Sensory receptors and nervous system	
15.	Unit IV: Physiology of Insects - Growth and metamorphosis	
16.	Unit IV: Physiology of Insects - Growth and metamorphosis	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Kishor Haloi
Course –Honours / Generic – **Honours**
Class/Semester –5th Semester **(CBCS)**
Name of the Paper – **DSE Course III: Endocrinology**
Units Assigned – Unit 1, and Unit 2
Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 1: Introduction to Endocrinology History of endocrinology, Classification	
2.	Unit 1: Introduction to Endocrinology History of endocrinology, Classification	
3.	Unit 1: Characteristic and Transport of Hormones	
4.	Unit 1: Characteristic and Transport of Hormones	
5.	Unit 1: Neurosecretions and Neurohormones	
6.	Unit 1: Neurosecretions and Neurohormones	
7.	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis Structure of pineal gland,	
8.	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis Secretions and their functions in biological rhythms and reproduction.	
9.	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis - Structure of hypothalamus,	
10.	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis - Hypothalamic nuclei and their functions,	
11.	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis - Regulation of Neuroendocrine glands	
12.	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis - Feedback Mechanisms	
13.	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis - Hormones and their Functions,	
14.	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis - Hypothalamo- hypophysial portal system	
15.	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis - Disorders of pituitary gland.	
16.	Unit 2: Epiphysis, Hypothalamo-hypophysial Axis - Disorders of pituitary gland.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – Honours

Class/Semester –1st Semester **(CBCS)**

Name of the Paper **- Course Code: Zc101 T Core Course I: Non-Chordates I: Protists to Pseudocoelomates**

Units Assigned – Unit 3 and Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 3: Cnidaria- General characteristics and Classification up to classes	
2.	Unit 3: Cnidaria- General characteristics and Classification up to classes	
3.	Unit 3: Cnidaria- Metagenesis in Obelia	
4.	Unit 3: Cnidaria- Polymorphism in Cnidaria	
5.	Unit 3: Cnidaria- Polymorphism in Cnidaria	
6.	Unit 4: Ctenophora General characteristics	
7.	Unit 4: Ctenophora- Evolutionary significance of Ctenophora	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – Honours

Class/Semester –1st Semester **(CBCS)**

Name of the Paper **- Core Course Ii: Principles of Ecology**

Units Assigned – Unit 2 and Unit 3

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 2: Population Population regulation - density-dependent and independent factors Population interactions,	
2.	Unit 2: Population Population regulation - density-dependent and independent factors Population interactions,	
3.	Unit 2: Population Population regulation - density-dependent and independent factors Population interactions,	
4.	Unit 2: Gause's Principle with laboratory and field examples	
5.	Unit 2: Gause's Principle with laboratory and field examples,	
6.	Unit 2: Lotka-Volterra equation for competition and Predation, functional and numerical responses.	
7.	Unit 2: Lotka-Volterra equation for competition and Predation, functional and numerical responses.	
8.	Unit 4: Ecosystem - Nutrient and biogeochemical cycle with Nitrogen cycle as an example Human modified ecosystem	
9.	Unit 4: Ecosystem - Nutrient and biogeochemical cycle with Nitrogen cycle as an example Human modified ecosystem	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Generic**

Class/Semester –1st Semester **(CBCS)**

Name of the Paper **- GE II: Animal Diversity**

Units Assigned – Unit 3, Unit 6, Unit 11 and Unit 13

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 3. Radiata - General characters of Cnidarians and polymorphism	
2.	Unit 3. Radiata - Polymorphism	
3.	Unit 3. Radiata - Polymorphism	
4.	Unit 6. Coelomate - Protostomes General Characters of Annelida	
5.	Unit 6. Coelomate - Metamerism	
6.	Unit 11. Pisces - Osmoregulation	
7.	Unit 11. Pisces -Migration of Fishes	
8.	Unit 13. Reptiles - Amniotes	
9.	Unit 13. Reptiles - Origin of reptiles.	
10.	Unit 13. Reptiles - Terrestrial adaptations in Reptiles	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Honours**

Class/Semester –**3rd Semester (CBCS)**

Name of the Paper - **Core Course V: Diversity of Chordata**

Units Assigned – Unit 8 and Unit 10

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 8: Aves- General characteristics and classification	
2.	Unit 8: Aves- General characteristics and classification	
3.	Unit 8: Aves- Archaeopteryx-- a connecting link	
4.	Unit 8: Aves- Principles and aerodynamics of flight	
5.	Unit 8: Aves- Principles and aerodynamics of flight	
6.	Unit 8: Aves-Flight adaptations	
7.	Unit 8: Aves-Flight adaptations	
8.	Unit 8: Aves-Migration in birds	
9.	Unit 8: Aves-Migration in birds	
10.	Unit 10: Zoogeography - Zoogeographical realms	
11.	Unit 10: Zoogeography - Theories pertaining to distribution of animals	
12.	Unit 10: Zoogeography - Plate tectonic and Continental drift theory	
13.	Unit 10: Zoogeography - Distribution of vertebrates in different realms	
13.	Unit 10: Zoogeography - Distribution of vertebrates in different realms	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Honours**

Class/Semester –**3rd Semester (CBCS)**

Name of the Paper - **Core Course Vi: Animal Physiology: Controlling And Coordinating Systems**
Units Assigned – Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 4: Muscle - Histology of different types of muscle	
	Unit 4: Muscle - Histology of different types of muscle	
2.	Unit 4: Muscle - Ultra structure of skeletal muscle	
3.	Unit 4: Muscle - Molecular and chemical basis of muscle contraction	
4.	Unit 4: Muscle - Molecular and chemical basis of muscle contraction	
5.	Unit 4: Muscle - Characteristics of muscle twitch	
6.	Unit 4: Muscle - Summation and tetanus.	
7.	Unit 4: Muscle - Motor unit	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Honours**

Class/Semester –**3rd Semester (CBCS)**

Name of the Paper - **Core Course Vi: Animal Physiology: Controlling And Coordinating Systems**
Units Assigned – Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 1: Carbohydrates - Structure and Biological importance: Monosaccharides	
2.	Unit 1: Carbohydrates - Structure and Biological importance: Monosaccharides	
3.	Unit 1: Carbohydrates - Structure and Biological importance: Disaccharides	
4.	Unit 1: Carbohydrates - Structure and Biological importance: Disaccharides	
5.	Unit 1: Carbohydrates - Structure and Biological importance: Polysaccharides	
6.	Unit 1: Carbohydrates - Structure and Biological importance: Polysaccharides	
7.	Unit 1: Carbohydrates - Structure and Biological importance: Glycoconjugates	
8.	Unit 1: Carbohydrates – Structure and Biological importance: Glycoconjugates	
9.	Unit 2: Lipids - Structure and Significance	
10.	Unit 2: Lipids - Physiologically important saturated and unsaturated fatty acids	
11.	Unit 2: Lipids - Tri-acylglycerols, Phospholipids, Glycolipids, Steroids.	
12.	Unit 2: Lipids - Tri-acylglycerols, Phospholipids, Glycolipids, Steroids.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Generic**

Class/Semester –**3rd Semester (CBCS)**

Name of the Paper – **GE VII: Human Physiology**

Units Assigned – Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 4: Renal Physiology - Functional anatomy of kidney	
2.	Unit 4: Renal Physiology - Mechanism and regulation of urine formation	
3.	Unit 4: Renal Physiology - Mechanism and regulation of urine formation	
4.	Unit 5: Cardiovascular Physiology - Structure of heart, Coordination of heartbeat, Cardiac cycle, ECG	
5.	Unit 5: Cardiovascular Physiology - Structure of heart,	
6.	Unit 5: Cardiovascular Physiology -Coordination of heartbeat,	
7.	Unit 5: Cardiovascular Physiology - Cardiac cycle	
8.	Unit 5: Cardiovascular Physiology - ECG	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Honours**

Class/Semester –5th Semester **(CBCS)**

Name of the Paper – **CORE COURSE XI**: **Molecular Biology**

Units Assigned – Unit 6

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 6: Gene Regulation - Transcription regulation in prokaryotes: Principles of transcriptional regulation	
2.	Unit 6: Gene Regulation - Transcription regulation in prokaryotes: Principles of transcriptional regulation with examples from *lac* operon	
3.	Unit 6: Gene Regulation - Transcription regulation in prokaryotes: Principles of transcriptional regulation with examples from *trp* operon;	
4.	Unit 6: Gene Regulation - Transcription regulation in eukaryotes: Activators, repressors, enhancers, silencer elements; Gene silencing, Genetic imprinting	
5.	Unit 6: Gene Regulation - Transcription regulation in eukaryotes: Activators, repressors, enhancers, silencer elements; Gene silencing, Genetic imprinting	
6.	Unit 6: Gene Regulation - Transcription regulation in eukaryotes: Activators, repressors, enhancers, silencer elements; Gene silencing, Genetic imprinting	
7.	Unit 6: Gene Regulation - Transcription regulation in eukaryotes: Activators, repressors, enhancers, silencer elements; Gene silencing, Genetic imprinting	
8.	Unit 6: Gene Regulation - Transcription regulation in eukaryotes: Activators, repressors, enhancers, silencer elements; Gene silencing, Genetic imprinting	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Honours**

Class/Semester –5th Semester **(CBCS)**

Name of the Paper – **CORE COURSE XII: PRINCIPLES OF GENETICS**

Units Assigned – Unit 2 and Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 2: Linkage, Crossing Over and Chromosomal Mapping Linkage and crossing over	
2.	Unit 2: Linkage, Crossing Over and Chromosomal Mapping Cytological basis of crossing over	
3.	Unit 2: Linkage, Crossing Over and Chromosomal Mapping Cytological basis of crossing over	
4.	Unit 2: Linkage, Crossing Over and Chromosomal Mapping Molecular mechanisms of crossing over including models of recombination	
5.	Unit 2: Linkage, Crossing Over and Chromosomal Mapping Molecular mechanisms of crossing over including models of recombination	
6.	Unit 2: Linkage, Crossing Over and Chromosomal Mapping Recombination frequency as a measure of linkage intensity, Two factor and three factor crosses, Interference and coincidence, Somatic cell hybridization.	
7.	Unit 2: Linkage, Crossing Over and Chromosomal Mapping Two factor and three factor crosses, Interference and coincidence, Somatic cell hybridization.	
8.	Unit 2: Linkage, Crossing Over and Chromosomal Mapping Two factor and three factor crosses, Interference and coincidence, Somatic cell hybridization.	
9.	Unit 2: Linkage, Crossing Over and Chromosomal Mapping Two factor and three factor crosses, Interference and coincidence, Somatic cell hybridization.	
11.	Unit 4: Sex Determination Chromosomal mechanisms of sex determination in Drosophila and Man	
12.	Unit 4: Sex Determination Chromosomal mechanisms of sex determination in Drosophila and Man	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Honours**

Class/Semester –5th Semester **(CBCS)**

Name of the Paper – **DSE Course III: ENDOCRINOLOGY**
Units Assigned –Unit 4
Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 4: Regulation of Hormone Action Hormone action at Cellular level and molecular level	
2.	Unit 4: Regulation of Hormone Action Hormone action at Cellular level and molecular level	
3.	Unit 4: Regulation of Hormone Action - Hormone receptor : signal transducer, second messenger	
4.	Unit 4: Regulation of Hormone Action - Hormone receptor : signal transducer, second messenger	
5.	Unit 4: Regulation of Hormone Action - Hormones in homeostasis	
6.	Unit 4: Regulation of Hormone Action - Hormones in homeostasis	
7.	Unit 4: Regulation of Hormone Action - Disorders of endocrine glands	
8.	Unit 4: Regulation of Hormone Action - Disorders of endocrine glands	
9.	Unit 4: Regulation of Hormone Action - Disorders of endocrine glands	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Honours**

Class/Semester –5th Semester **(CBCS)**

Name of the Paper – **DSE Course IV: BIOLOGY OF INSECTA**

Units Assigned –Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit I: Introduction - General Features of Insects	
2.	Unit I: Introduction - Distribution and Success of Insects on the Earth	
3.	Unit VI: Insects as Vectors Insects as mechanical and Biological vectors,	
4.	Unit VI: Insects as Vectors Brief discussion on houseflies and mosquitoes as important insect vectors	
5.	Unit VI: Insects as Vectors Brief discussion on houseflies and mosquitoes as important insect vectors	
6.	Unit VI: Insects as Vectors Brief discussion on houseflies and mosquitoes as important insect vectors	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Babita Das**

Course – B.sc

Class/Semester –5th Semester **(CBCS)**

Name of the Paper –**DSE 4- BIOLOGY OF INSECTA**

Units Assigned – Unit 4

Marks Assigned –28 out of 60

Class	Topic/Unit	Month	Remark
1.	**Unit 4:** Structure and function of Integumentary	August	
2.	**Unit 4**: Structure and function of Integumentary	August	
3.	**Unit 4**: Structure and function of Digestive System	August	
4.	**Unit 4**: Structure and function of Digestive System	August	
5.	**Unit 4**: Structure and function of Excretory System	September	
6.	**Unit 4**: Structure and function of Excretory System	September	
7.	**Unit 4**: Structure and function of Respiratory System	September	
8.	**Unit 4**: Structure and function of Respiratory System	September	
9.	**Unit 4**: Structure and function of Nervous System	September	

10.	**Unit 4**: Sensory Receptors	September	
11.	**Unit 4**: Structure and function of Circulatory System	October	
12.	**Unit 4**: Structure and function of Circulatory System	October	
13.	**Unit 4**: Structure and function of Reproductive System	October	
14.	**Unit 4**: Structure and function of endocrine System .	October	
15.	**Unit 4**: Growth and Metamorphosis	October	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2023

Name of the Teacher- **Babita Das**

Course – B.Sc

Class/Semester –3rd Semester **(CBCS)**

Name of the Paper –**GE-7 HUMAN PHYSIOLOGY**

Units Assigned – Unit 5

Marks Assigned – 10 out of 60

class	Topic/unit	Month	Remark
1.	**Unit 5:** Structure of Heart	September	
2.	**Unit 5:** Structure of Heart	September	
3.	**Unit 5:** Cardiac Cycle	September	
4.	**Unit 5:** Cardiac Cycle	September	
5.	**Unit 5**: ECG	October	
6.	**Unit 3:** Coordination of Heartbeat	October	

DIGBOI COLLEGE, DIGBOI

COURSE PLAN

Session: January, 2023 – May, 2023

Even Semester

DIGBOI COLLEGE, DIGBOI

Course Plan

CBCS COURSE

Session-Jan 2023 to May 2023

1. Name of the Teacher- Dr. Abhijit Mahanta
Course –Honours / Generic – Honours
Class/Semester-2nd sem
Name of the Paper-Chemistry C-201
Units Assigned- Unit III, IV, V
Marks Assigned- 30

Class	Topic/ Unit	Remarks
1.	Unit III-Chemistry of aliphatic hydrocarbon-introduction	
2.	Unit III-Chemistry of alkane, preparation of alkane	
3.	Unit III-Chemistry of alkane, preparation of alkane	
4.	Unit III-Chemistry of alkane, preparation of alkane	
5.	Unit III-Chemistry of alkene, preparation of alkene	
6.	Unit III-Chemistry of alkane, preparation of alkane	
7.	Unit III-Chemistry of alkane, reaction of alkene	
8.	Unit III-1,2 and 1,4 addition reaction in conjugated dienes, Diels Alder reactions, Alllylic and benzylic bromination	
9	Unit III Reaction of alkyne: Acidity, Electrophilic and Nucleophilic reaction, hydration of alkyne	
10	Unit V-Aromaticity, Hucke's rule, aromatic character of arenes	
11	Unit V- Cyclic carbocation, carbanions and heterocyclic copounds with suitable examples	
12	Unit V- Electrophilic aromatic substitution: halogenation , nitration, sulphonation	
13	Unit V-Fridel Craft alkylation, directing groups	
14	Unit V -Cycloalkanes preparation and their stability	
15	Unit V -Bayer strain theory	

2. Name of the Teacher- Dr. Abhijit Mahanta
Course –Honours / Generic – Generic
Class/Semester-2nd sem
Name of the Paper-Chemistry GE-201
Units Assigned- Unit 4
Marks Assigned- 12

Class	Topic/ Unit	Remarks
1.	Unit 4- Alcohols, phenols and ethers-Preparation of alcohol	
2.	Unit 4- Alcohols, phenols and ethers -Preparation of alcohol	
3.	Unit 4- Alcohols, phenols and ethers -Preparation of alcohol	
4.	Unit 4- Alcohols, phenols and ethers- Reactions of alcohol	
5.	Unit 4- Alcohols, phenols and ethers Pinacol-Pinacolone rearrangement, Lucas test, oxidation diols	
6.	Unit 4- Alcohols, phenols and ethers- Preparation of phenols	
7.	Unit 4- Alcohols, phenols and ethers- Reactions of phenols	
8.	Unit 4- Alcohols, phenols and ethers- Preparation of aldehyde	
9	Unit 4- Alcohols, phenols and ethers- Reactions of aldehyde	
10	Unit 4- Alcohols, phenols and ethers -Aldol condensation, Cannizzaro reaction, Wittig reaction, MPV reduction	
11	Unit 4- Alcohols, phenols and ethers -Clemensen reduction, Benzoin, Wolff Krishner	

3. Name of the Teacher- Dr. Abhijit Mahanta
Course –Honours / Generic – Honours
Class/Semester-4 th sem
Name of the Paper-Chemistry C-402
Units Assigned- Unit III, IV, V
Marks Assigned- 30

Class	Topic/ Unit	Remarks
1.	Unit III-Classification and nomenclature of heterocyclic compound	
2.	Unit III-Classification and nomenclature of heterocyclic compound	
3.	Unit III-Synthesis of pyrrol, furan, thiophene	
4.	Unit III-Synthesis of pyrrol, furan, thiophene	
5.	Unit III-Reaction of pyrrol, furan, thiophene	
6.	Unit III-Synthesis of pyridine, pyrimidine, Indole	
7.	Unit III-Synthesis of quinoline, isoquinoline	
8.	Unit III-Synthesis of quinoline, isoquinoline	
9	Unit IV: Occurrence of alkaloids, structural features	
10	Unit IV: Isolation of alkaloid, physiological acxtion	
11	Unit IV: Hoffman exhaustive methylation, Emedes modification	
12	Unit IV: Structure elucidation and synthesis of hygrine, nicotine	
13	Unit IV: Medicinal importance of alkaloids	
14	Unit V: Occurrence and classification of terpenoids	
15	Unit V: Elucidation of structure	
16	Unit V: synthesis of citral, neral, terpinol	

4. Name of the Teacher- Dr. Abhijit Mahanta
Course –Honours / Generic – Honours(CBCS)
Class/Semester-6th sem
Name of the Paper-C-602 Organic Chemistry
Units Assigned- Unit I, II
Marks Assigned- 14

Class	Topic/ Unit	Remarks
1.	Unit I-Mass spectrometry, Principle, application	
2.	Unit I-Mass spectrometry, Problems	
3.	Unit I- Mass spectrometry, Problems	
4.	Unit II-Carbohydrates: Occurrence, classification, biological importance	
5.	Unit II- Carbohydrates ; Monosaccharides, constitution and absolute configuration of glucose and fructose	
6.	Unit II- Carbohydrates Monosaccharides, constitution and absolute configuration of glucose aand fructose	
7.	Unit II- Carbohydrates Monosaccharides, constitution and absolute configuration of glucose and fructose	
8.	Unit II- Carbohydrates Monosaccharides, epimers, anomers, mutarotation	
9	Unit II- Carbohydrate Determination of ring size of glucose and frucose	
10	Unit II- Carbohydrate Determination of ring size of glucose and frucose	
11	Unit II- Carbohydrate Haworth projection formula	
12	Unit II- Carbohydrates Intrconversion of aldoses to ktoses and vice versa	
13	Unit II- Carbohydrates Intrconversion of aldoses to ktoses and vice versa	
14	Unit II- Carbohydrates Ascending and descending orders	

5. Name of the Teacher- Dr. Abhijit Mahanta
Course –Honours / Generic – Honours (CBCS)
Class/Semester-6th sem
Name of the Paper-DSE-602Industrial chemicals and enviornment
Units Assigned- Unit I
Marks Assigned- 10

Class	Topic/ Unit	Remarks
1.	Unit I-Industrial gases and inorganic chemicals Industrial gases production, storage, uses, hazards	
2.	Unit I-Industrial gases and inorganic chemicals Industrial gases production, storage, uses, hazards	
3.	Unit I-Industrial gases and inorganic chemicals Industrial gases production, storage, uses, hazards	
4.	Unit I-Industrial gases and inorganic chemicals Inorganic materials: manufacture, application, analysisand hazards	
5.	Unit I-Industrial gases and inorganic chemicals Inorganic materials: manufacture, application, analysisand hazards	
6.	Unit I-Industrial gases and inorganic chemicals Inorganic materials: manufacture, application, analysisand hazards	
7.	Unit I-Industrial gases and inorganic chemicals Inorganic materials: manufacture, application, analysisand hazards	
8.	Unit I-Industrial gases and inorganic chemicals Inorganic materials: manufacture, application, analysisand hazards	
9	Unit I-Industrial gases and inorganic chemicals Inorganic materials: manufacture, application, analysisand hazards	
10	Unit I-Industrial gases and inorganic chemicals Inorganic materials: manufacture, application, analysisand hazards	

6. Name of the Teacher- Dr. Abhijit Mahanta
Course –Honours / Generic – Honours (CBCS)
Class/Semester-6th sem
Name of the Paper-DSE-603
Dissertation (Project work)
Marks Assigned- 100

Class	Topic/ Unit	Remarks
1.	Objective	
2.	Objective	
3.	Objective	
4.	Review of literature	
5.	Review of literature	
6.	Review of literature	
7.	Review of literature	
8.	Review of literature	
9	Dissertation writing	
10	Dissertation writing	
11	Dissertation writing	
12	Dissertation writing	
13	Dissertation writing	
14	Dissertation writing	

COURS PLAN FOR MAJOR COURSE (CBCS)
JAN TO JUN 2023 (EVEN SEMESTER)

Name of the Teacher:- Achyut Saikia
Department of Assamese
Digboi College, Digboi

Class: BA 2nd Semester
Name of the paper: Poetics
Paper Code: C-4
Unit Assignes: 1 & 2
Marks Assign: 24

Class	Topic/Unit	Remarks
1	Introduction to the course	
2	Shabashakti	
3	Do	
4	Rasa	
5	Do	
6	Dvani	
7	Do	
8	Guna and Riti	
9	Do	
10	Class Test	
11	Realism	
12	Do	
13	Modernism	
14	Do	
15	Revision	
16	Revision	
17	Revision	
18	Revision	

Class: BA 4th Semester
Name of the paper: Theory and Practice of Comparative literature
Paper Code: C- 8
Unit Assignes: Full Paper
Marks Assign: 80

Class	Topic/Unit	Remarks
1	Introduction to the course	
2	The idea of comparative literature	
3	Formation and development	
4	Definition	
5	Relation between combative literature and comparative study	
6	Various aspects of comparative literature	
7	Do	
8	Do	
9	Comparative literature: Indian perspective	
10	Comparative literature in India	
11	Do	
12	Do	
13	Comparative Indian Literature	
14	Do	
15	Comparative literature in Assam	
16	Studies on comparative literature in Assam	
17	Do	
18	Class test	
19	Practice of comparative literature	
20	Studies on comparative literature	
21	Comparision to literature with other art form	
22	Cinematic form of the short story Banaprastha	
23	About the author	
24	Aesthetic value	
25	do	
26	changes	
27	Revision	
28	Revision	

Class: BA 6th Semester
Name of the paper: Introduction to world literature
Paper Code: DSE-3
Unit Assignes: 1, 3, 4, 5(a)
Marks Assign: 50

Class	Topic/Unit	Remarks
1	Introduction to the course	
2	Idea of world literature	
3	Do	
4	Literature and human mind	
5	Literature and society	
6	Literature and aesthetic value	
7	Human value and emotions as universal truth	
8	World literature and translation	
9	Class test	
10	Revision	
11	Mopasannt as story writer	
12	Characteristics of the short stories of Mopasannt	
13	The Necklace – plot construction	
14	Characteristics	
15	Other aspects	
16	Anton Chekhov as a story writer	
17	Characteristics	
18	Maruchhir Swapna – plot construction	
19	Characteristics	
20	Other aspects	
21	O Henry as a story writer	
22	Characteristics	
23	The gift of Magi – plot construction	
24	Characteristics	
25	Other aspects	
26	Revision	
27	Thomas hardy as a poet	
28	The poem dead man walking	

29	Discussiion	
30	Diety of first Desire by Garcia Lorkca	
31	Overall discussion	
32	Somoyar Santanbor by Alexender Block (Assamese Translation)	
33	Discussion	
34	Incident by Counti Culer	
35	Discussion	
36	The Black Man's son by Oswald Durant	
37	Discussion	
38	Revision	
39	Afke's Ten by Nenke Van Hekhtum	
40	Itroduction of the writer	
41	Afke's Ten in Assamese by Mahendra Bora	
42	Plot construction of the novel	
43	Characterisation	
44	Other aspects	
45	Discussion about the translation	
46	Artistic value of the novel	
47	Revision	

Class: BA 6th Semester
Name of the paper: Selection from Assamese Prose
Paper Code: C-13
Unit Assignes: 2(a)
Marks Assign: 10

Class	Topic/Unit	Remarks
1	Introduction	
2	Various aspects of novel	
3	Manomati by Rajanikanta Bordoloi	
4	About the author	
5	Background of Assamese novel	
6	Plot construction of the novel	
7	Characterisation	
8	Do	
9	Other aspects	
10	Do	
11	Revision	
12	Revision	

DIGBOI COLLEGE, DIGBOI

Course Plan (Session Jan.- May) 2023

Department Of Hindi

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B.A. 2nd Semester

Name of the Paper-Aadikaleenewam Madhyakaleen Hindi Kavita, C-3

Units Assigned- Unit – 3 & Unit - 4

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Soordas Ka SahityikParichaya,	
3.	Soordas ka Vatsalya Varnan	
4.	Merau Man Anat Kahan Sukh Pawai – Vyaakhya.	
5.	Kilkat Kaanha ghuturuwaniAawat - Vyaakhya.	
6.	Hamarai Hari Haril Ki Lakari - Vyaakhya.	
7.	Ati Maleen Vrishabhaanu-Kumari - Vyaakhya.	
8.	Tutorial/Discussion.	
9.	Tulasidas Ka SahityikParichaya,	
10.	TulasidasKe Kavya Men Bhakti-Bhavana	
11.	Kavitawali Ka Samanya Parichaya,	
12.	Ehi GhaatateThorikDooriAhai Kati Lau Jalu ThaahDekhaaihau Joo - Vyaakhya.	
13.	Kheti N Kisaan Ko Bhikhaari Ko N Bheekh, Bali, - Vyaakhya.	
14.	VinayPatrika- Parichaya,	
15.	Ramko Gulam, Naam RambolaRaakhyon Ram – Vyaakhya	
16.	Esi Moodhataa Yaa Manki – Vyaakhaya,	
17.	Question & Answer	
18.	Tutorial / Discussion	
19.	Ghananand jeewanParichaya	
20.	Ghananand Prem KePeer..	
21.	Ghananand Ke Kavya Men Premanubhooti	
22.	Parkaajhi Deh Kau Dhaari Firau ParajanyaJathaaratha- Vyaakhyaa	
23.	AtiSoodho Saneh ko Maaraghai Jahan SayaanapBaank Nahin – Vyaakhya,	
24.	Rahim –Parichaya	
25.	Rahim keDohon Ki Vyaakhya - 6,7,11,12.	
26.	Rahim keDohon Ki Vyaakhya – 14,15,16,20.	
27.	Rahim keDohon Ki Vyaakhya – 24,25.	
28.	Bihari Ka Parichaya	
29.	Bihari keDhohenDekhane men Chhote Par Bhaav Gambhir hotehai- Alochana	
30.	Bihari keDohon ki Vyaakhaya - 1,2, 3,6,9,	
31	Bihari keDohon ki Vyaakhaya -10, 13, 20,22,26	
32	Tutorial/ Discussion	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B.A. 2nd Semester

Name of the Paper- Aadhunik Hindi Kavita (ChhayaavadTak), C-4

Units Assigned- Unit – 3 & Unit - 4

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	JayShankar Prasad Ka Sahityik Parichay	
3.	'Aansoon' Kavita Men Varnit Peeda…	
4.	'Aanoon' –Vyaakhyaa	
5.	'Aanoon' –Vyaakhyaa	
6.	'Aanoon' –Vyaakhyaa	
7.	'Aanoon' –Vyaakhyaa	
8.	'He! Laaj Bhare Saundarya Bata do' –Vyaakhyaa	
9.	Le Chal VahaanBhulaawa Dekar –Vyaakhyaa	
10.	Tutorial / Discussion	
11.	Sooryakaant Tripathi 'Niraalaa' SahityikParichaya	
12.	Joohi Ki Kali–Vyaakhyaa	
13.	Sandhyaa Sundari –Vyaakhyaa	
14.	Bandho N Naaw–Vyaakhyaa	
15.	Question & Answer	
16.	Question & Answer	
17.	Tutorial / Discussion	
18.	Sumitranandan Pant -SahityikParichaya	
19.	Pratham Rashmi –Vyaakhyaa	
20.	Vaani –Vyaakhyaa	
21.	Vaani -& Pratham Rashmi – Saransh	
22.	Question & Answer	
23.	Tutorial / Discussion	
24.	Mahadevi Verma - SahityikParichaya	
25.	Mahadevi Verma : Aadhunik Meera	
26	Kaun PahunchaaDegaa Us Paar-Vyaakhyaa	
27.	Yah Mandir ka Deep Ise NeerawJalaane Do –Vyaakhyaa	
28.	Question & Answer	
29.	Question & Answer	
30.	Tutorial / Discussion	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B.A. 4th Semester

Name of the Paper- Bhasha Vigyan Aur Hindi Bhasha, C-8

Units Assigned- Unit – 1 & Unit - 2

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Bhaha- Swaroop	
3.	Bhasha ki Paribhasha	
4.	Bhasha aur Boli Men Antar	
5.	Bhasha Vigyan - Swaroop	
6.	Bhasha Vigyan ki Paribhasha	
7.	Bhasha Vigyan ke Ang	
8.	Bhasha Vigyan ke Ang	
9.	Bhasha Vigyan ki Shakhaen	
10.	Bhasha Vigyan ki Shakhaen	
11.	Bhasha ki Pravritiyan	
12.	Bhasha ki Visheshatayen	
13.	Bhasha Vigyan ke Adhyayan se Labha	
14.	Tutorial/ Discussion	
15.	Dhwani Vigyan	
16.	Dhwani Vigyan- Swaroop	
17.	Dhwani Vigyan- Paribhasha	
18.	Dhwaniyon ka Vargikaran	
19.	Dhwaniyon ka Vargikaran	
20.	Dhwaniyon ka Vargikaran	
21.	Tutorial/ Discussion	
22.	Roopim Vigyan- Tatparya,	
23.	Roopim Vigyan – Swaroop,	
24.	Roopim ki Awadharana	
25.	Roopim Vigyan – Paribhasha	
26.	Roopim Vigyan- Prakar	
27.	Roopim Vigyan- (Naam, Aakhyaat, Upasarg aur Nipaat,)	
28.	Tutorial / Discussion	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester- B.A. 4th Semester

Name of the Paper- HindiUpanyas , C-9

Units Assigned- Unit – 1 & Unit - 3

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Premchand Ki Upanyas Kala	
3.	Gaban – Upanyas Explanation	
4.	Gaban – Upanyas Explanation	
5.	Gaban – Upanyas Explanation	
6.	Gaban – Upanyas Explanation	
7.	Gaban – Upanyas Explanation	
8.	Gaban – Upanyas Explanation	
9.	Gaban – Upanyas Explanation	
10.	Gaban – Upanyas Kala ketatwake Samiksha	
11.	Gaban – Upanyas Kala ketatwake Samiksha	
12	Gaban – Upanyaske Patron ka Charitra - Chitran	
13.	Jalapa ka Charitra – Chitran	
14.	Important Paragraph Ka Vyaakhya.	
15. .	Important Paragraph Ka Vyaakhya.	
16.	Tutorial / Discussion	
17.	AmritlaalNaagar- Krititwa	
18.	Manas ka Hans - Upanyas Explanation	
19.	Manas ka Hans - Upanyas Explanation	
20.	Manas ka Hans - Upanyas Explanation	
21.	Manas ka Hans - Upanyas Explanation	
22.	Manas ka Hans - Upanyas Explanation	
23.	Manas ka Hans - Upanyas Explanation	
24.	Manas ka Hans - Upanyas Explanation	
25.	Manas ka Hans - Upanyas Explanation	
26.	Manas ka Hans - Upanyas Explanation	
27.	Manas ka Hans - Upanyas - Kalaa	
28.	Manas ka Hans – Naamkaran ki Sarthakata	
29.	Manas ka Hans – Uddeshya	
30.	Manas ka Hans: Patra-Yojana	
31.	Ratnaawali ka Charitra – Chitran	
32.	Manas ka Hans keaadharPar spashtkijiye ki ‘GoswaamiTulasidas : MaanaveeyaAasthaaonke Amar Gayak’ hai ?	
33.	Manas ka Hans -Vyakhya	
34.	Manas ka Hans –Vyakhya	
35.	Tutorial / Discussion.	

Name of the Teacher- Dr. Anuradha Kumari Sahu
Course –Honours / Generic – Honours
Class/Semester- B.A. 4th Semester
Name of the Paper- Hindi Kahani, C-10
Units Assigned- Unit –3 & Unit -4
Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Phaniswar Nath Renu- Parichaya,	
3.	'Teesari Kasam' Kahani,	
4.	'Teesari Kasam' Kahani,	
5.	'Teesari Kasam' Kahani,	
6.	'Teesari Kasam' Kahani,	
7.	'Teesari Kasam' Kahani Patra Yojana,	
8.	'Teesari Kasam' Kahani- Kala keTatwa ki Samiksha,	
9.	'Teesari Kasam' Kahani ki Vyaakhyaa	
10.	Mohan Rakesh EkParichaya	
11.	'Malabe ka Malik'- Kahani	
12.	'Malabe ka Malik'- Kahani	
13.	'Malabe ka Malik'- Kahani	
14.	'Malabe ka Malik'- Kahani ki Samiksha	
15.	'Malabe ka Malik'- Kahani ki Patra Yojana	
16.	Gini miya ka Charitra-Chitran	
17.	'Malabe ka Malik'- Kahani ki Important Lines Ki Vyaakhyaa.	
18.	'Malabe ka Malik'- Kahani ki Important Lines Ki Vyaakhyaa.	
19.	Tutorial / Discussion	
20.	Amarkant ka Parichaya	
21.	Dopahar ka Bhojan - Kahani	
22.	Dopahar ka Bhojan - Kahani	
23.	Dopahar ka Bhojan – Kahani	
24.	Dopahar ka Bhojan – Kahani- Patra Yojana	
25.	Dopahar ka Bhojan – Kahani – Kala ke Aadhar Par Samiksha	
26.	Dopahar ka Bhojan – Kahani ki Vyaakhyaa	
27.	Dopahar ka Bhojan – Kahani ki Vyaakhyaa	
28.	Tutorial / Discussion	
29.	Krishna Shobati – Parichaya	
30.	Sikka Badal Gaya – Kahani	
31.	Sikka Badal Gaya – Kahani	
32.	Sikka Badal Gaya – Kahani	
33.	Sikka Badal Gaya – Kahani ki Samiksha	
34	Sikka Badal Gaya – Kahani ki Vyaakhyaa	
35.	Tutorial / Discussion	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester-B.A. 6th Semester

Name of the Paper- Hindi ki Sahityik Patrakarita (C-13)

Units Assigned- Unit – 3 & Unit- 4

Marks Assigned- 20+20

Sl. No.	Topic/ Unit	Remarks
1.	Introduction- Swatantrottar Patrakarita	
2.	Swatantrottar Patrakarita ki Visheshta	
3.	Swatantrottar Patrakarita- Parichay	
4.	Swatantrottar Patrakarita- Parichay	
5.	Swatantrottar Patrakarita - Pravritiyan	
6.	Swatantrottar Patrakarita - Pravritiyan	
7.	Swatantrottar Patrakarita - Pravritiyan	
8.	Tutorial / Discussion	
9.	Samkaleen Saahityik Patrakarita - Parichay	
10.	Samkaleen Saahityik Patrakarita - Parichay	
11.	Samkaleen Saahityik Patrakarita- Pravritiyan	
12.	Samkaleen Saahityik Patrakarita -	
13.	Tutorial / Discussion	
14.	Hindi Ki Vividh Patra-Patrika : Sankshep Parichay	
15.	Hindi Ki Vividh Patra-Patrika- Banaras Akhabar	
16.	Hindi Ki Vividh Patra-Patrika- Bharat Mitra	
17.	Hindi Ki Vividh Patra-Patrika- Hindi Pradip	
18.	Hindi Ki Vividh Patra-Patrika- Swadesh	
19.	Hindi Ki Vividh Patra-Patrika-Pratap	
20.	Hindi Ki Vividh Patra-Patrika- Jansatta	
21.	Tutorial / Discussion	
22.	Question & Answer	
23.	Question & Answer	
24.	Question & Answer	
25.		

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester-B.A. 6th Semester

Name of the Paper- Prayojanmoolak Hindi (C-14)

Units Assigned- Unit – 1& Unit - 2

Marks Assigned- 20+20

Sl.No.	Topic/ Unit	Remarks
1.	Introduction – Syllabus	
2.	Prayojanmoolak Hindi ka Swaroop aur Paribhasha	
3.	Prayojanmoolak Hindi ke Prakar	
4.	Prayojanmoolak Hindi ke Prakar/ Roop, Mahatw, Simaaen aur Sambhawanae	
5.	Hindi ki Smvaidhanik Sthiti	
6.	Hindi ki Smvaidhanik Sthiti- Ashtam anusoochi me Shamil Bhasha	
7.	Hindi ki Smvaidhanik Sthiti	
8.	Hindi Bhasha ke Vividh Roop	
9.	Hindi Bhasha ke Vividh Roop	
10.	Hindi Bhasha ke Vividh Roop	
11.	Tutorial	
12.	Hindi Ka Manakikaran	
13.	Hindi Ka Manakikaran	
14.	Hindi Ka Manakikaran : Vartani ke Star Par	
15.	Hindi Ka Manakikaran : Vartani ke Star Par	
16.	Hindi Ka Manakikaran : Vartani ke Star Par	
17.	Prayojanmoolak Hindi ki Shailiya	
18.	Prayojanmoolak Hindi ki Shailiya	
19.	Prayojanmoolak Hindi ki Shailiya	
20.	Prayojanmoolak Hindi ki Shailiya	
21.	Prayojanmoolak Hindi ki Shailiya	
22.	Tutorial	
23.	Prayojanmoolak Hindi ki Shailiya	
24.	Prayojanmoolak Hindi ki Shailiya	
25.	Prayojanmoolak Hindi ki Shailiya	
26.	Revision	
27.	Discussion	
28.	Revison	
29.	Revison	
30.	Revison	
31.	Revison	
32.	Revison	
33.	Revison	
34.	Revison	
35	Discussion	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester-B.A. 6th Semester

Name of the Paper- Tulasidas(DSE-3)

Units Assigned- Unit –1& Unit - 2

Marks Assigned- 20+20

Sl. No.	Topic/ Unit	Remarks
1.	Introduction	
2.	Goswami Tulasi ka Vyaktitw	
3.	Tulasidas Ka Krititwa	
4.	Tulasidas Ka Krititwa	
5.	Tulasidas Ka SahityikParichaya	
6.	TulasidasKe Kavya Men Bhakti-Bhavana	
7.	Tutorial	
8.	TulasidasKe Kavya Men Bhakti-Bhavana	
9.	Ayodhyakaand Parichay	
10.	Ayodhyakaand: Doha – chupai 67-76 Parichay	
11.	Ayodhyakaand: 69&70 Vyakhya	
12.	Ayodhyakaand: : 71&72 Vyakhya	
13.	Ayodhyakaand: : 73 Vyakhya	
14.	Ayodhyakaand: 74 Vyakhya	
15.	Ayodhyakaand: 75 Vyakhya	
16.	Ayodhyakaand: 76 Vyakhya	
17.	Ayodhyakaand : Katha	
18.	Discussion	
19.	Tutorial	
20.	Revison	
21.	Revison	
22.	Revison	
23.	Revison	
24.	Revison	
25.	Discussion	

Name of the Teacher- Dr. Anuradha Kumari Sahu

Course –Honours / Generic – Honours

Class/Semester-B.A. 6th Semester

Name of the Paper- Premchand (DSE-4)

Units Assigned- Unit – 1 & Unit - 2

Marks Assigned- 20+20

Sl. No.	Topic/ Unit	Remarks
1.	Sevasadan – Novel (Saaransh)	
2.	Premchand Ka Parichay	
3.	Sevasadan Upanyas Men Samajikata	
4.	Sevasadan Upanyas Men Paatra Yojana	
5.	Sevasadan Upanyas Men Nihit Samasya	
6.	Sevasadan Upanyas Men Nihit Samasya	
7.	Sevasadan Upanyas	
8.	Sevasadan Upanyas	
9.	Sevasadan Upanyas	
10.	Sevasadan Upanyas	
11.	Discussion	
12.	Karbala Natak Ka Saransh	
13.	Discussion	
14.	Discussion	
15.	Discussion	
16.	Discussion	

COURSE PLAN FOR SESSION JANUARY-MAY,2023
INSTRUCTOR: MISS. ANINDITA MAHANTA
DEPARTMENT OF MATHEMATICS
DIGBOI COLLGE

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan (Session January-May, 2023)

Name of the Teacher- Ms. Anindita Mahanta

Course– B.Sc. Honours

Class/Semester- Semester VI

Name of the Paper- C13 Metric Spaces and Complex Analysis

Units Assigned- Unit 3, 4, 5, 6

Marks Assigned- 45

Class	Topic/ Unit	Remarks
1.	Limits	
2.	Limits involving the point at infinity-I	
3.	Limits involving the point at infinity-II	
4.	Continuity	
5.	Tutorial-V	
6.	Properties of complex numbers	
7.	Regions in the complex plane	
8.	Functions of complex variable	
9.	Mappings	
10.	Tutorial-VI	
11.	Derivatives	
12.	Differentiation formulas	
13.	Differentiation formulas-II	
14.	Cauchy-Riemann equations, sufficient conditions for Differentiability	
15.	Tutorial-VII	
16.	Analytic functions	
17.	Examples of analytic functions	
18.	Exponential function	
19.	Logarithmic function	
20.	Trigonometric function	
21.	Tutorial-VIII	
22.	Derivatives of functions	
23.	Definite integrals of functions	
24.	Tutorial-IX	
25.	Contours	
26.	Contour integrals and its examples	

27.	Upper bounds for moduli of contour integrals	
28.	Tutorial-X	
29.	Cauchy- Goursat theorem	
30.	Cauchy integralformula	
31.	Tutorial-XI	
32.	Liouville's theorem	
33.	Liouville's theorem and the fundamental theorem of algebra	
34.	Tutorial-XII	
35.	Convergence of sequences	
36.	Convergence of series	
37.	Taylor series and its examples	
38.	Tutorial-XIII	
39.	Laurent series	
40.	Laurent series and its examples	
41.	Tutorial-XIV	
42.	Absolute convergence of power series	
43.	Uniform convergence of power series	
44.	Tutorial-XV	
45.	Revision	

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan (Session January-May, 2023)

Name of the Teacher: Ms. Anindita Mahanta

Course –Honours/Generic: Honours

Class/Semester: Fourth Semester

Name of the Paper: Numerical Methods (P) Paper Code: C8

Units Assigned: Complete Paper

Marks Assigned: Theory – 60 and Practical – 20.

Class	Topic/ Unit	Remarks
1.	**Unit-1:** Introduction to Numerical Methods.	
2.	Classification of DE	
3.	Algorithm: Definition with examples	
4.	Frow charts: Definition, symbols for flow charts with examples	
5.	Convergence of numerical methods.	
6.	Relative and absolute errors.	

7.	Truncation Errors.	
8.	Tutorial I	
9.	**Unit-2:** Transcendental and polynomial equations: Definition and examples	
10.	Bisection method: Derivation	
11.	Bisection method: Examples	
12.	Bisection method: Examples	
13.	Bisection method: convergence	
14.	Newton Raphson Method: Derivation	
15.	Newton Raphson Method: Examples	
16.	Newton Raphson Method: Examples	
17.	Newton Raphson Method: convergence	
18.	Tutorial II	
19.	Secant and Regula falsi Method: Derivation	
20.	Secant and Regula falsi Method: Examples	
21.	Secant and Regula falsi Method: Examples	
22.	Secant and Regula falsi Method: convergence	
23.	Tutorial III	
24.	**Unit-3:** Solution of simultaneous linear equation:	
25.	Gauss Elimination Method: Derivation	
26.	Gauss Elimination Method: examples	
27.	Gauss Elimination Method: Convergence	
28.	Tutorial IV	
29.	Gauss Jordan Method: Derivation	
30.	Gauss Jordan Method: Examples	
31.	Gauss Jordan Method: Convergence	
32.	Gauss Jacobi Method: Derivation	
33.	Gauss Jacobi Method: Examples	
34.	Gauss Jacobi Method: Convergence	
35.	Gauss Seidel Method: Derivation	
36.	Gauss Seidel Method: Examples	
37.	Gauss Seidel Method: Convergence	
38.	Tutorial V	
39.	**Unit-4:** Interpolation	
40.	Lagrange's Interpolation formula: Derivation	
41.	Lagrange's Interpolation formula: Examples	
42.	Lagrange's Interpolation formula: Error calculation	
43.	Finite difference operator, definition and examples	
44.	Tutorial VI	
45.	Newton Gregory forward interpolation formula: Derivation	
46.	Newton Gregory forward interpolation formula: Examples	
47.	Newton Gregory forward interpolation formula: Error Calculation	
48.	Newton Gregory backward interpolation formula: Derivation	
49.	Newton Gregory backward interpolation formula: Examples	

50.	Newton Gregory backward interpolation formula: Error Calculation	
51.	Tutorial VII	
52.	**Unit-5**: Numerical Integration: Definition and examples	
53.	Trapezoidal Rule: Derivation	
54.	Trapezoidal Rule: Examples	
55.	Simpson's $1/3^{rd}$ Rule: Derivation	
56.	Simpson's $1/3^{rd}$ Rule: Examples	
57.	Simpson's $3/8^{th}$ Rule: Derivation	
58.	Simpson's $3/8^{th}$ Rule: Examples	
59.	Tutorial VIII	
60.	Boole's Rule : Derivation	
61.	Boole's Rule: Examples	
62.	Midpoint Rule: Derivation	
63.	Midpoint Rule: Examples	
64.	Midpoint Rule: Derivation	
65.	Midpoint Rule: Examples	
66.	Tutorial IX	
67.	Composite Trapezoidal Rule: Derivation and Examples	
68.	Composite Simpson's Rule: Derivation and examples	
69.	**Unit-6: ODE: Euler's Method: Derivation**	
70.	Euler's method: Examples	
71.	Euler's modified method: Derivation	
72.	Euler's modified method: Examples	
73.	Derivation of R.K. method of order two and four.	
74.	Examples of R.K. method of order two and four.	
75.	Tutorial X	
76.	**Practical: MatLab programming, basic Data types**	Practical Class 2 hours.
77.	Data types-simple data types, floating data types, character data types	
78.	arithmetic operators and operator precedence, variables and constant declarations, expressions,	
79.	input/output statement, relational operators, logical operators and logical expressions,	
80.	control statements and loop statements, Arrays should be introduced to the students.	
81.	Tutorial XI	
82.	MatLab programme for Calculate the sum 1/1 + 1/2 + 1/3 + 1/4 + ---------- + 1/N	
83.	MatLab programme for To find the absolute value of an integer and Enter 100 integers into an array and sort them in an ascending order	
84.	MatLab programme for Bisection Method	
85.	MatLab programme for Newton Raphson Method	
86.	MatLab programme for Secant Method	
87.	MatLab programme for Regula Falsi Method	
88.	MatLab programme for LU decomposition Method	

89.	MatLab programme for Gauss-Jacobi Method	
90.	MatLab programme for Gauss-Siedel Method	
91.	MatLab programme for Newton Interpolation	
92.	Tutorial XII	
93.	MatLab programme for Simpson's $1/3^{rd}$ Rule	
94.	MatLab programme for Simpson's $3/8^{th}$ Rule	
95.	Revision I	
96.	Revision II	
97.	Revision III	

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan (Session January-May, 2023)

Name of the Teacher- Ms. Anindita Mahanta

Course– B.Sc. Honours

Class/Semester- Semester II

Name of the Paper- GE-2.1 Differential Equation

Units Assigned- Unit 1, Unit 2 & Unit 3

Marks Assigned- 52

Class	Topic/ Unit	Remarks
1.	Introduction to exact differential equations	
2.	First order exact differential equations	
3.	Introduction to Integrating factors	
4.	Rules to find an integrating factor	
5.	Tutorial and discussion of problems	
6.	First order higher degree equations solvable for x	
7.	First order higher degree equations solvable for y	
8.	First order higher degree equations solvable for p	
9.	Tutorial and discussion of problems	
10.	Methods for solving higher-order differential equations	
11.	Basic theory of linear differential equations	
12.	Wronskian and its properties	

13.	Tutorial and discussion of problems	
14.	Solving a differential equation by reducing its order	
15.	Examples and problems on differential equation by reducing its order	
16.	Linear homogenous equations with constant coefficients	
17.	Linear non-homogenous equations	
18.	Tutorial and discussion of problems	
19.	The method of variation of parameters	
20.	The Cauchy-Euler equation	
21.	Tutorial and discussion of problems	
22.	Simultaneous differential equations	
23.	Total differential equations	
24.	Tutorial and discussion of problems	
25.	Revision	

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan (Session January-May, 2023)

Name of the Teacher- Ms. Anindita Mahanta

Course– B.Com. Honours

Class/Semester- Semester IV

Name of the Paper- Business Mathematics, C409

Units Assigned- Unit 1

Marks Assigned: Not assigned in the syllabus

Class	Topic/ Unit	Remarks
1.	Introduction to Matrix	
2.	Types of Matrices	
3.	Properties of Matrices	
4.	Algebra of Matrices I	
5.	Algebra of Matrices II	
6.	Problem Solving	
7.	Tutorial I	
8.	Introduction to Determinant	
9.	Properties of Determinant	
10.	Problems on finding determinant	
11.	Minors & Cofactors of Matrices I	

12.	Minors & Cofactors of Matrices II	
13.	Problem Solving	
14.	Tutorial II	
15.	Adjoint of a Matrix	
16.	Inverse of a matrix I	
17.	Inverse of a matrix II	
18.	Problem Solving	
19.	Tutorial III	
20.	Matrix Operation	
21.	Business Application	
22.	Solution of a system of linear equations: Matrix Inversion	
23.	Cremer's Rule	
24.	Problem Solving	
25.	Tutorial IV	
26.	Revision	

COURSE PLAN FOR SESSION JAN-MAY 2023

INSTRUCTOR: DR. ARJUN SINGH CHETRY

DEPARTMENT: MATHEMATICS

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Arjun Singh Chetry

Course– B.Sc. Honours

Class/Semester- Semester II

Name of the Paper- C3. Real Analysis

Units Assigned- Unit 1,2,3 (all units)

Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Overview of the Course and the Paper (Real Analysis)	
2.	Review of Algebraic and Order Properties of $\mathbb{R}$	
3.	Order Properties of $\mathbb{R}$	
4.	ϵ-neighborhood of a point in $\mathbb{R}$	
5.	Idea of countable sets, uncountable sets	
6.	uncountability of $\mathbb{R}$	
7.	De Moivre's theorem for rational indices (with Proof)	
8.	Bounded above sets, Bounded below sets	
9.	Application of De Moivre's theorem (simplifying trigonometric identities)	
10.	Bounded Sets, Unbounded sets	
11.	Tutorial-I	
12.	Suprema and Infima	
13.	The Completeness Property of R,	
14.	Functions (in context with relations)	
15.	The Archimedean Property	
16.	Tutorial-II	
17.	Density of Rational (and Irrational) numbers in R	
18.	Intervals	
19.	Limit points of a set	
20.	Isolated points	
21.	One to one correspondence and cardinality of a set	
22.	Illustrations of Bolzano-Weierstrass theorem for sets	
23.	Tutorial III	
24.	Sequences and Bounded sequence	
25.	Convergent sequence	
26.	Limit of a sequence	
27.	Limit Theorems	

28.	Tutorial IV	
29.	Examples and Problems	
30.	Monotone Sequences	
31.	Monotone Convergence Theorem	
32.	Tutorial-V	
33.	Subsequences	
34.	Divergence Criteria	
35.	Monotone Subsequence Theorem (statement only)	
36.	Problems related to Monotone Subsequence Theorem	
37.	Bolzano Weierstrass Theorem for Sequences	
38.	Cauchy sequence	
39.	Cauchy's Convergence Criterion	
40.	Tutorial-VI	
41.	Infinite series	
42.	Convergence and divergence of infinite series-I	
43.	Convergence and divergence of infinite series-II	
44.	Cauchy Criterion-I	
45.	Cauchy Criterion-II(Problems)	
46.	Tests for convergence- Convergence Test	
47.	Comparison Test(contd.)	
48.	Limit Comparison test-I	
49.	Limit Comparison test-II	
50.	Ratio Test-I	
51.	Ratio Test-II	
52.	Cauchy's n^{th} root test-I	
53.	Cauchy's n^{th} root test-II	
54.	Integral test-I	
55.	Integral test-II	
56.	Alternating series-I	
57.	Alternating series-II	
58.	Leibniz test-I	
59.	Leibniz test-II	
60.	Absolute and Conditional convergence-I	
61.	Absolute and Conditional convergence-II	
62.	Revision (remaining classes)	

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan

Name of the Teacher- Dr. Arjun Singh Chetry

Course– B.Sc. Honours

Class/Semester- Semester IV

Name of the Paper- C10 Ring Theory & Linear Algebra I

Units Assigned- Unit 3, 4 (shared)

Marks Assigned- 28

Class	Topic/ Unit	Remarks
1.	Introduction to the Part/Course	
2.	Definition and Examples of Vector spaces	
3.	Examples of vector spaces	
4.	Tutorial I	
5.	Definition & Examples of subspaces	
6.	Examples of subspaces	
7.	Algebra of subspaces	
8.	Quotient spaces	
9.	Tutorial II	
10.	Linear combination of vectors	
11.	Linear Span & Linear Independence	
12.	Basis and Dimension	
13.	Examples of basis and dimension	
14.	Dimension of subspaces	
15.	Tutorial III	
16.	Linear Transformations: Definition an Examples	
17.	Null space and Range of a Linear Transformation	
18.	Tutorial IV	
19.	Matrix representation of a linear transformation	
20.	Examples	
21.	Algebra of Linear Transformations	
22.	Isomorphisms	
23.	Isomorphism Theorems	
24.	Tutorial V	
25.	Invertibility and Isomorphisms-I	
26.	Invertibility and Isomorphisms-II	
27.	Change of coordinate matrix-I	
28.	Change of coordinate matrix-II	
29.	Tutorial VI	

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan

Name of the Teacher- Dr. Arjun Singh Chetry

Course– B.Sc. Honours

Class/Semester- Semester IV

Name of the Paper- GE-4 Algebra

Units Assigned- Unit 2 (shared)

Marks Assigned- 28

Class	Topic/ Unit	Remarks
1.	Definition and Examples of Groups	
2.	Examples of abelian and non-abelian groups	
3.	The group of Z_n of integers under addition modulo n and the group $U(n)$ of units under multiplication modulo n	
4.	Subgroups	
5.	Cyclic Subgroups	
6.	Tutorial I	
7.	Subgroup generated by a Subset I	
8.	Subgroup generated by a Subset II	
9.	Commutator Subgroup	
10.	Examples of Subgroup	
11.	Tutorial II	
12.	Centre of a group	
13.	Index of Subgroup	
14.	Lagrange's Theorem	
15.	Order of an element	
16.	Examples of finding order of an element	
17.	Normal subgroups: introduction & definition	
18.	Examples of Normal subgroups	
19.	Tutorial III	
20.	Characterizations I	
21.	Characterizations II	
22.	Quotient Groups: introduction	
23.	Quotient Groups: definitions & examples	
24.	Tutorial IV	
25.	Revision I	
26.	Revision II	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Arjun Singh Chetry

Course– B.Sc. Honours

Class/Semester- Semester VI

Name of the Paper- C13 Metric Spaces and Complex Analysis

Units Assigned- Unit 1, 2(shared).

Marks Assigned- 35

Class	Topic/ Unit	Remarks
1.	Overview of the Course and the Paper	
2.	Metric spaces: definition and examples	
3.	Metric spaces (Problems)	
4.	Sequences in metric spaces-I	
5.	Sequences in metric spaces-II	
6.	Cauchy sequences	
7.	Tutorial-I	
8.	Complete Metric Spaces-I	
9.	Complete Metric Spaces-II	
10.	Open and closed balls-I	
11.	Open and closed balls-II	
12.	Neighbourhood	
13.	Open set	
14.	Interior of a set	
15.	Limit point of a set	
16.	Tutorial-II	
17.	Closed set	
18.	Diameter of a set	
19.	Cantor’s theorem	
20.	Subspaces	
21.	Dense sets, separable spaces	
22.	Continuous mappings	
23.	Sequential criterion and other characterizations of continuity.	
24.	Uniform continuity	
25.	Tutorial-III	
26.	Homeomorphism	
27.	More examples of Homeomorphism	

28.	Contraction mappings-I	
29.	Contraction mappings-II	
30.	Compactness	
31.	Compactness-II	
32.	Tutorial-IV	
33.	Banach Fixed point Theorem	
34.	Connectedness	
35.	Connected subsets of R	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Arjun Singh Chetry

Course– B.Com. Honours

Class/Semester- Semester IV

Name of the Paper- C-409 Business Mathematics

Units Assigned- Unit 5(shared)

Marks Assigned- NA

Class	Topic/ Unit	Remarks
1.	Formulation of LPP	Unit 5
2.	Tutorial I	
3.	Graphical Solution to LPP	
4.	Tutorial II	
5.	Tutorial III	
6.	Cases of Unique optimal solutions	
7.	Tutorial IV	
8.	Cases of multiple solutions	
9.	Tutorial VI	
10.	Unbounded solutions	
11.	Tutorial VII	
12.	Tutorial VIII	
13.	Infeasibility	
14.	Tutorial IX	
15.	Redundant Constraints	
16.	Tutorial-X	

COURSE PLAN FOR SESSION JANUARY-JUNE 2022

INSTRUCTOR: DR. BINOD CHETRY

DEPARTMENT: MATHEMATICS

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Binod Chetry

Course– B.Sc. Honours

Class/Semester- Semester II

Name of the Paper- GE-2.1 Differential Equation

Units Assigned- Unit 1, Unit 2 & Unit 3

Marks Assigned- 52

Class	Topic/ Unit	Remarks
1.	Introduction to exact differential equations	
2.	First order exact differential equations	
3.	Introduction to Integrating factors	
4.	Rules to find an integrating factor	
5.	Tutorial and discussion of problems	
6.	First order higher degree equations solvable for x	
7.	First order higher degree equations solvable for y	
8.	First order higher degree equations solvable for p	
9.	Tutorial and discussion of problems	
10.	Methods for solving higher-order differential equations	
11.	Basic theory of linear differential equations	
12.	Wronskian and its properties	
13.	Tutorial and discussion of problems	
14.	Solving a differential equation by reducing its order	
15.	Examples and problems on differential equation by reducing its order	
16.	Linear homogenous equations with constant coefficients	
17.	Linear non-homogenous equations	
18.	Tutorial and discussion of problems	
19.	The method of variation of parameters	
20.	The Cauchy-Euler equation	
21.	Tutorial and discussion of problems	
22.	Simultaneous differential equations	
23.	Total differential equations	
24.	Tutorial and discussion of problems	
25.	Revision	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Binod Chetry

Course– B.Sc. Honours

Class/Semester- Semester IV

Name of the Paper- C 9 Riemann Integration and Series of Functions

Units Assigned- Unit 1,2,3, 4 & 5 (all units)

Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Introduction to Riemann integration	
2.	Examples and problems of Riemann integration	
3.	Inequalities of upper and lower sums	
4.	Examples and problems of inequalities of upper and lower sums	
5.	Riemann conditions of integrability	
6.	Riemann sum	
7.	Definition of Riemann integral through Riemann sums	
8.	Equivalence of two definitions	
9.	Tutorial and discussion	
10.	Riemann integrability of monotone and continuous functions	
11.	Examples and problems on Riemann integrability of monotone and continuous functions	
12.	Properties of the Riemann integral	
13.	Tutorial and discussion	
14.	Definition and integrability of piecewise continuous functions	
15.	Definition and integrability of piecewise continuous functions and monotone	
16.	Examples of piecewise continuous functions	
17.	Examples of piecewise continuous and monotone functions	
18.	Problems on piecewise continuous functions	
19.	Problems on piecewise continuous and monotone functions	
20.	Tutorial and discussion	
21.	Intermediate Value theorem for Integrals	
22.	Examples of Intermediate Value theorem for Integrals	
23.	Problems on Intermediate Value theorem for Integrals	
24.	Fundamental theorems of Calculus	
25.	Examples of Fundamental theorems of Calculus	
26.	Problems on Fundamental theorems of Calculus	
27.	Tutorial and discussion	
28.	Revision of Riemann condition of Integrability	
29.	Some more problem on Riemann sums	

30.	Tutorial and discussion	
31.	Introduction of Improper integrals	
32.	Properties and examples of Improper integrals	
33.	Introduction of Beta and Gamma functions	
34.	Convergence of Beta and Gamma functions	
35.	Tutorial and discussion	
36.	Introduction to Pointwise and uniform convergence of sequence of functions	
37.	Examples and properties of Pointwise and uniform convergence of sequence of functions	
38.	Problems on Pointwise and uniform convergence of sequence of functions	
39.	Theorems on continuity of the limit function of a sequence of functions	
40.	Examples and problems on continuity of the limit function of a sequence of functions	
41.	Theorems on derivability of the limit function of a sequence of functions	
42.	Examples and problems on derivability of the limit function of a sequence of functions	
43.	Theorems on integrability of the limit function of a sequence of functions	
44.	Examples and problems on integrability of the limit function of a sequence of functions	
45.	Tutorial and discussion	
46.	Series of functions	
47.	Theorems on the continuity of the sum function of a series of functions	
48.	Examples and problems on the continuity of the sum function of a series of functions	
49.	Theorems on the derivability of the sum function of a series of functions	
50.	Examples and problems on the derivability of the sum function of a series of functions	
51.	Cauchy criterion for uniform convergence	
52.	Examples and problems on Cauchy criterion for uniform convergence	
53.	Weierstrass M-Test	
54.	Examples and problems on Weierstrass M-Test	
55.	Tutorial and discussion	
56.	Introduction to Limit superior and Limit inferior	
57.	Examples and problems on Limit superior and Limit inferior	
58.	Power series	
59.	Properties of power series	
60.	Examples and problems on Power series	
61.	Radius of convergence	
62.	Examples and problems on radius of convergence	
63.	Tutorial and discussion	
64.	Cauchy Hadamard Theorem	
65.	Examples and problems on Cauchy Hadamard Theorem	
66.	Differentiation and integration of power series	
67.	Examples and problems on Differentiation and integration of power series	
68.	Abel's Theorem	
69.	Examples and problems on Abel's Theorem	
70.	Weierstrass Approximation Theorem	
71.	Examples and problems on Weierstrass Approximation Theorem	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Binod Chetry

Course– B.Sc. Honours

Class/Semester- Semester VI

Name of the Paper- DSE 4.1 Mathematical Methods

Units Assigned- Unit 1,2,3, 4 & 5(all units)

Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Introduction to Fourier Series	
2.	Examples and properties of Fourier Series	
3.	Problems on Fourier Series	
4.	Dirichlet conditions	
5.	Examples and problems using Dirichlet conditions	
6.	Tutorial and discussion	
7.	Fourier series for even functions	
8.	Examples and problems on Fourier series for even functions	
9.	Fourier series for odd functions	
10.	Examples and problems on Fourier series for odd functions	
11.	Tutorial and discussion	
12.	Introduction to Half range Fourier series	
13.	Half range Fourier series for even and odd function	
14.	Examples and problems on Half range Fourier series	
15.	Tutorial and discussion	
16.	**Laplace Transform**: Definition of Laplace transform	
17.	Existence theorem for Laplace transform	
18.	Linearity property of Laplace transform	
19.	Laplace transform of some elementary functions. (algebraic functions, trigonometric functions, exponential functions, hyperbolic functions).	
20.	First Shifting theorem	
21.	Second shifting theorem	
22.	Change of scale property	
23.	Laplace transform of derivatives	
24.	Laplace transform of Integrals	
25.	Examples and Problem discussion	
26.	Introduction to Inverse Laplace Transform	
27.	Definition of Inverse Laplace Transform	
28.	Examples and problems on Inverse Laplace Transform	
29.	Properties of Inverse Laplace Transform	
30.	First shifting theorem	

31.	Examples and problems of first shifting theorem	
32.	Second shifting theorem	
33.	Examples and Problems on second shifting theorems	
34.	Tutorial and discussion	
35.	Some more problems on first and second shifting theorem	
36.	Convolution theorem	
37.	Examples and problems on Convolution theorem	
38.	Revision of Change of scale property, Linearity property etc	
39.	Problem discussion on Change of scale property, Linearity property etc	
40.	Tutorial and discussion	
41.	Introduction to Fourier Transform, and Inverse Fourier transform	
42.	Dirichlet conditions	
43.	Definition of Fourier transform	
44.	Tutorial and discussion	
45.	Inverse theorem for Fourier transform	
46.	Fourier Sine transform and inversion formula	
47.	Fourier cosine transform and inversion formula	
48.	Tutorial and discussion	
49.	Linearity property	
50.	Change of scale property	
51.	Shifting property	
52.	Modulation theorem	
53.	Convolution theorem	
54.	Tutorial and discussion	
55.	Applications of Fourier and Laplace transform	
56.	Solution of Boundary value problems and initial value problems in 1-D case	
57.	Solution of Boundary value problems and initial value problems in 2-D case	
58.	Solution of Laplace equation in 2-D case	
59.	Solution of Poisson equation in 2-D case	
60.	Tutorial and discussion	

Course Plan
DIGBOI COLLEGE, DIGBOI
Jan – May (Even Semester) 2022

Name of the Teacher: **Dr. Bishwajit Saikia**
Course: **Honours**
Class/Semester: **2nd Semester**
Name of the Paper: **C-201**
Units Assigned: **I + II**
Marks Assigned: **8 + 12**

Class	Topic	Remarks
Unit I: Basic Organic Chemistry		
1.	Classification and Nomenclature, Hybridization	
2.	Inductive effect, electromeric effect and their applications	
3.	Resonance, hyperconjugation and their applications	
4.	Dipole moment, Organic acids and bases	
5.	Hard acids/bases soft acid/base	
6.	Homolytic and heterolytic fission, curly arrow rule, formal charge	
7.	Electrophiles and nucleophiles	
8.	Nucleophilicity and basicity	
9.	Carbocation, Carbanion	
10.	Free radicals, carbene	
11.	Energy profile diagram of single, two and three step reactions	
12.	Activation energy, thermodynamically and kinetically controlled reactions	
Unit II: Stereochemistry		
1.	Fischer and sawhorse projection formula and their interconversions	
2.	Newmann and sawhorse projection formula and their interconversions	
3.	Geometrical isomerism and their properties	
4.	Cis/trans and syn/anti isomerism	
5.	CIP rule for E/Z notation	
6.	Optical activity, specific rotation, chirality/asymmetry	
7.	Enantiomers with examples and their properties	
8.	Diastereosomers with examples and their properties	
9.	Meso compounds and Epimers	
10.	Racemic mixture and resolution	
11.	Threo and Erythro forms	
12.	Relative and absolute configuratios	
13.	D/L designation	
14.	R/S designation	

DIGBOI COLLEGE, DIGBOI

Course Plan

Jan – May (Even Semester) 2023

Name of the Teacher: **Dr. Bishwajit Saikia**
Course: **Generic**
Class/Semester: **2nd Semester (Section B: Organic Chemistry)**
Name of the Paper: **GE-201**
Units Assigned: **IV + V**
Marks Assigned: **8 + 8**

Class	Topic	Remarks
Unit IV: Aromatic Hydrocarbons		
1.	Preparation of benzene from phenol	
2.	Preparation of benzeneby decarboxylation, from acetylene	
3.	Preparation of benzene from benzene sulphonic acid.	
4.	Nitration	
5.	Halogenation	
6.	Sulphonation	
7.	Friedel-Craft's reaction (alkylation and acylation)	
8.	Side chain oxidation of alkyl benzenes	
Unit V: Alkyl and Aryl Halides		
1.	SN1, SN2 and SNi	
2.	Preparation: from alkenes and alcohols	
3.	Hydrolysis reaction	
4.	Nitrite & nitro formation	
5.	Nitrile &isonitrile formation	
6.	Williamson's ether synthesis	
7.	Elimination vs substitution	
8.	Preparation of aryl halide from benzene	
9.	Sandmeyer&Gattermann reactions, Aromatic nucleophilic substitution (replacement by –OH group) and effect of nitro substituent	
10.	Benzyne Mechanism: KNH_2/NH_3 (or $NaNH_2/NH_3$). Reactivity and Relative strength of C-Halogen bond in alkyl, allyl, benzyl, vinyl and aryl halides.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Jan – May (Even Semester) 2023

Name of the Teacher: **Dr. Bishwajit Saikia**
Course: **Honours**
Class/Semester: **4thSemester**
Name of the Paper: **C-402**
Units Assigned: **I + II +V**
Marks Assigned: **14 + 12 + 6**

Class	Topic	Remarks
Unit I: Nitrogen Containing Functional Groups		
1.	Preparation and important reactions of nitro and compounds	
2.	Nitriles and isonitriles	
3.	Effect of substituent and solvent on basicity of amines	
4.	Gabriel phthalimide synthesis	
5.	Carbylamine reaction, Mannich reaction	
6.	Hoffmann's exhaustive methylation	
7.	Hofmann-elimination reaction	
8.	Distinction between 1°, 2° and 3° amines with Hinsberg reagent	
9.	Distinction between 1°, 2° and 3° amines with nitrous acid	
10.	Preparation of diazonium salt	
11.	Synthetic applications of diazonium salt	
12.	Diazomethane	
13.	Diazoacetic Ester	
Unit II: Polynuclear Aromatic Hydrocarbons		
1.	Preparation and structure elucidation of naphthalene	
2.	Reactions of naphthalene	
3.	Preparation and structure elucidation ofphenanthrene	
4.	Reactions of phenanthrene	
5.	Preparation and structure elucidation of anthracene	
6.	Reactions of anthracene	
7.	Important derivatives of naphthalene	
8.	Important derivatives of anthracene	
Unit V: Terpenes		
1.	Occurrence of terpenes	
2.	Classification of terpenes	
3.	Isoprene rule	
4.	Elucidation of stucture and synthesis of Citral	
5.	Elucidation of stucture and synthesis of Neral	
6.	Elucidation of stucture and synthesis of □-terpeneol	

DIGBOI COLLEGE, DIGBOI

Course Plan

Jan – May (Even Semester) 2023

Name of the Teacher: **Dr. Bishwajit Saikia**

Course: **Honours**

Class/Semester: **6thSemester**

Name of the Paper: **C-602**

Units Assigned: **I + III + IV**

Marks Assigned: **10 + 10 + 10**

Class	Topic	Remarks
Unit IV: Organic Spectroscopy		
1.	Basic principles of Proton Magnetic Resonance, chemical shiftand factors influencing	
2.	Spin – Spin coupling and coupling constant;	
3.	Anisotropic effects inalkene, alkyne, aldehydes and aromatics	
4.	Applications of IR, UV, NMR and Mass for identification of simple organicmolecules.	
Unit III Dyes		
1.	Classification, Colour and constitution	
2.	Mordant and Vat Dyes	
3.	Azo dyes, Triphenyl Methane Dyes	
4.	Phthalein Dyes, Natural dyes	
Unit IV Polymers		
1.	Addition and condensation -Mechanism of cationic, anionicand free radical addition polymerization	
2.	Ziegler-Natta polymerisation of alkenes;Preparation and applications of plastics	
3.	thermosetting (phenol-formaldehyde,Polyurethanes) and thermosoftening (PVC, polythene);	
4.	Fabrics – natural and synthetic (acrylic, polyamido, polyester);	
5.	Rubbers – natural andsynthetic: Buna-S, Chloroprene and Neoprene;	
6.	Vulcanization; Polymer additives;Biodegradable polymers with examples.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Jan – May (Even Semester) 2023

Name of the Teacher- **Dr. Bishwajit Saikia**
Course — Honours (CBCS)
Class/Semester-6th sem
Name of the Paper-DSE-603
Dissertation (Project work)
Marks Assigned- 100

Class	Topic/ Unit	Remarks
1.	Objective	
2.	Objective	
3.	Objective	
4.	Review of literature	
5.	Review of literature	
6.	Review of literature	
7.	Review of literature	
8.	Review of literature	
9	Dissertation writing	
10	Dissertation writing	
11	Dissertation writing	
12	Dissertation writing	
13	Dissertation writing	
14	Dissertation writing	

DIGBOI COLLEGE, DIGBOI

COURSE PLAN, DEPT. OF ASSAMESE

[EVEN SEMESTER] -2023

Name of the Teacher : Deepa Sarmah Borthakur

Course : B.A.

Semester : 2nd Semester

Name of the Paper : Introduction to Linguistics

Course Code : AEC-3

Unit Assigned : I, II & V

Marks Assigned : 16, 16, 16

Class	Topic / Unit : I (Major Course)	Remarks
1.	Definition of Language on Western & Western Eastern language experts.	
2.	Elements of language.	
3.	The characteristics of language.	
4.	Variation of language.	
5.	Variation of language and idiolect.	
6.	Dialect.	
7.	The Social Dialect.	
8.	The Ethnic Dialect.	
9.	Local Dialect.	
10.	The State language.	
11.	The National language.	
12.	The International language.	
13.	Lingua Franca 'Assamese and Nagamese'.	
14.	The Pidjin language.	
15.	The Creole language.	
16.	Revision.	
17.	Class Test.	

Class	Topic / Unit : II	Remarks
18.	Linguistics : Difference between traditional Grammar, Philology and Linguistics.	
19.	Branches of Linguistics.	
20.	Descriptional Linguistics.	
21.	Historical Linguistics.	
22.	Comparative Linguistics.	
23.	Opposite Linguistics.	
24.	Socio-Linguistics.	
25.	Mental Linguistics.	
26.	Applied Linguistics.	
27.	Revision.	
Class	**Topic / Unit : V**	**Remarks**
28.	Language Studies in India.	
29.	Language Studies in Assam.	
30.	Language Studies in Western Countries.	
31.	New concept in Language Studies.	
32.	Revision.	
33.	Class Test.	

DIGBOI COLLEGE, DIGBOI

COURSE PLAN (Even Semester), 2023

Name of the Teacher : Deepa Sarmah Borthakur
Course : Honours (Assamese)
Semester : 4th Semester
Name of the Paper : Indo-Aryan Language & Assamese Language (C-9)
Units Assigned : 1, 2
Marks Assigned : 15, 15

Class	Topic / Unit : I (15)	Remarks
1.	Development of Indo-Aryan language	
2.	Classification of Indo-Aryan language	
3.	Old Indo-Aryan language	
4.	Middle Indo-Aryan language	
5.	Significance of word 'Prakrit' and its development	
6.	'Pali language and significance of word 'Pali'	
7.	The characteristics of Pali and Prakrit language	
8.	Origin and development of Pali and Prakrit language	
9.	Uses of Prakrit language in Sanskrit Drama	
10.	Apabhramsa language	
11.	The characteristics of Apabhramsa language	

Class	Topic / Unit : II (15)	Remarks
1.	Sanskrit literature 'Nitisatak Sloka'	
2.	The author of 'Nitisatak Sloka'	
3.	The history of 'Asokan Edicts'	
4.	The subjectmatter of the 'Edicts'	
5.	The language of the 'Asokan Edicts'	
6.	Assamese translation from Asokan Edicts 'Girnar-1' & 'Kalsi-1'	
7.	Pali literature 'Dhammapada' and its 'Appamada Bagga'	
8.	Subjectmatter of 'Appamada Bagga'	
9.	Assamese translation	

Class	Topic / Unit : II (15)	Remarks
10.	The language of 'Appamada Bagga'	
11.	Prakrit literature 'Gathasattasai' and its Author	
12.	Assamese translation from 'Gathasattasai'	
13.	The language of the 'Gatha'	
14.	Subjectmatter of the 'Gatha'	
15.	Apabhramsa literature 'Sandesha Rasaka' and its Author	
16.	Subjectmatter of the 'Rasaka'	
17.	Assamese translation	

DIGBOI COLLEGE, DIGBOI

COURSE PLAN, DEPT. OF ASSAMESE

[2023]

Name of the Teacher : Deepa Sarmah Borthakur

Course Major

Semester : 6th Semester

Name of the Paper : The Language & Scripts of Assam

Course Code : C-14

Unit Assigned : I, III & V

Marks Assigned : 16, 16, 16

Class	Topic / Unit : I (Major Course)	Remarks
1.	The Languages of Assam.	
2.	The Sino-Tibetan languages of Assam.	
3.	The Boro and Deuri language.	
4.	The Rabha and Garo language.	
5.	Dimasa and Karbi language.	
6.	Mishing language & Rajbansi language.	
7.	The Kakbarak language of Tripura.	
8.	The Tai languages of Assam.	
9.	The Tai Ahom language & Tai Phake language.	
10.	The Tai Khamti & Tai Aiton language.	
11.	The Tai Khamiyang and Tai Turung language.	
12.	Dialects of Assam.	
13.	The Kamrupi Dialect.	
14.	Sub-Dialects of Kamrupi Dialect.	
15.	The Guwalporiya Dialect.	
16.	Revision.	

Class	Topic / Unit : III	Remarks
17.	The characteristics of Sino-Tibetan language.	
18.	The characteristics of Boro language.	
19.	The characteristics of Karbi language.	
20.	The characteristics of Mishing language.	
21.	The characteristics of Khamti language.	
22.	The characteristics of Tai Phake language.	
23.	The characteristics of Tai Turung language.	
24.	The Austric language of Assam.	
25.	Revision.	
26.	Class Test.	
Class	**Topic / Unit : IV**	**Remarks**
27.	Aryan language 'Assamese' and Non Aryan language of Assam.	
28.	Non Aryan elements in Assamese language.	
29.	The Ahom words in Assamese language.	
30.	The Bodo elements in Assamese language.	
31.	The Rabha elements in Assamese language.	
32.	The Mishing elements in Assamese language.	
33.	The Tiwa & Garo language elements in Assamese language.	
34.	Indian words in Assamese language.	
35.	English words in Assamese language.	
36.	Assamese elements in Non-Aryan language.	
37.	Assamese elements in Bodo, Mishing, Karbi, Tiwa, Rabha languages.	
38.	Revision.	
39.	Class Test.	

COURSE PLAN

Name of the Teacher: DR. DEEP KUMAR KURI

Department of Physics

Period: January-June 2023

1) Paper: Electricity and Magnetism (PHYSICS – C III) - B.Sc. 2nd Semester (H)

Unit	Class	Topic	Remarks
Unit 3 Magnetic Field	1	Magnetic force between current elements and definition of Magnetic Field **B**	
	2	Biot-Savart's Law and its simple applications: straight wire and circular loop	
	3	Current Loop as a Magnetic Dipole and its Dipole Moment	
	4	Ampere's Circuital Law and its application to (1) Solenoid and (2) Toroid.	
	5	Properties of **B**: curl and divergence.	
	6	Vector Potential	
	7	Magnetic Force on (1) point charge (2) current carrying wire	
	8	Magnetic Force between current elements	
	9	Torque on a current loop in a uniform Magnetic, Field	
Unit 4	1	Magnetization vector (**M**). Magnetic Intensity (**H**).	

Magnetic Properties of Matter	2	Magnetic Susceptibility and permeability	
	3	Relation between **B, H, M**	
	4	Ferromagnetism. B-H curve and hysteresis	
Unit 5 Electromagnetic Induction	1	Faraday's Law. Lenz's Law.	
	2	Self-Inductance and Mutual Inductance	
	3	Reciprocity Theorem	
	4	Energy stored in a Magnetic Field.	
	5	Introduction to Maxwell's Equations	
	6	Charge Conservation and Displacement current.	

2) Paper: Elements of Modern Physics (PHYSICS – C IX) - B.Sc. 4th Semester (H)

Unit	Class	Topic	Remarks
Unit 1	1	Planck's constant and light as a collection of photons	
	2	Blackbody Radiation: Quantum theory of Light	
	3	Photo-electric effect	
	4	Photo-electric effect (continued)	
	5	Compton scattering	
	6	Compton scattering (continued)	
	7	De Broglie wavelength and matter waves	
	8	Davisson-Germer experiment	
	9	Wave description of particles by wave packets	

	10	Wave description of particles by wave Packets (continued)	
	11	Group and Phase velocities and relation between them	
	12	Two-Slit experiment with electrons	
	13	Wave amplitude and wave functions	
	14	Probability	
Unit 2	1	Position measurement- gamma ray microscope thought experiment	
	2	Wave-particle duality, Heisenberg uncertainty principle	
	3	Derivation from Wave Packets impossibility of a particle following a trajectory	
	4	Estimating minimum energy of a confined particle using uncertainty principle	
	5	Energy-time uncertainty principle application to virtual particles and range of an interaction.	
Unit 3	1	Two slit interference experiment with photons, atoms and particles	
	2	linear superposition principle as a consequence	
	3	Matter waves and wave amplitude	
	4	Schrodinger equation for non-relativistic particles	
	5	Momentum and Energy operators	
	6	stationary states	
	7	physical interpretation of a wave	

		function	
	8	probabilities and normalization	
	9	Probability and probability current densities in one dimension	
	10	Probability and probability current densities in one dimension (continued)	
Unit 4	1	One dimensional infinitely rigid box	
	2	Energy eigen values and eigen functions	
	3	Normalization	
	4	Quantum dot	
	5	Quantum mechanical scattering in one dimension-across a step potential	
	6	Tunneling in one dimension-across a step potential	
	7	Quantum mechanical scattering in one dimension- across a rectangular potential barrier	
	8	Quantum mechanical scattering in one dimension- across a rectangular potential barrier (continued)	
	9	Tunneling in one dimension- across a rectangular potential barrier	
	10	Tunneling in one dimension- across a rectangular potential barrier (continued)	
Unit 5	1	Size and structure of atomic nucleus and its relation with atomic weight	
	2	Impossibility of an electron being in the nucleus as a consequence of the	

		uncertainty principle	
	3	Nature of nuclear force	
	4	NZ graph	
	5	Liquid Drop model: semi-empirical mass formula and binding energy	
	6	Nuclear Shell Model and magic numbers	
Unit 6	1	Radioactivity	
	2	stability of the nucleus	
	3	Law of radioactive decay	
	4	Mean life and half-life	
	5	Alpha decay, Beta decay- energy released	
	6	spectrum and Pauli's prediction of neutrino, Gamma ray emission	
	7	Energy-momentum conservation: electron-positron pair creation by gamma photons in the vicinity of a nucleus	
	8	Energy-momentum conservation: electron-positron pair creation by gamma photons in the vicinity of a nucleus (continued)	
Unit 7	1	Fission and fusion- mass deficit, relativity and generation of energy; Fission - nature of fragments and emission of neutrons.	
	2	Nuclear reactor: slow neutrons interacting with Uranium 235	
	3	Fusion and thermonuclear reactions	

		driving stellar energy	
Unit 8	1	Einstein's A and B coefficients, Metastable states	
	2	Spontaneous and Stimulated emissions	
	3	Optical Pumping and Population Inversion	
	4	Three-Level and Four-Level Lasers, Ruby Laser and He-Ne Laser. Basic lasing.	

3) Paper: Electromagnetic Theory (PHYSICS – C XIII) – B.Sc. 6th Semester (M)

Unit	Class	Topic	Remarks
Unit – 1 Maxwell Equations	1	Review of Maxwell's equations	
	2	Displacement Current	
	3	Vector and Scalar Potentials	
	4	Gauge Transformations: Lorentz and Coulomb Gauge	
	5	Boundary Conditions at Interface between Different Media	
	6	Boundary Conditions at Interface between Different Media contd…	
	7	Wave Equations	
	8	Plane Waves in Dielectric Media	
	9	Poynting Theorem and Poynting Vector	
	10	Poynting Theorem and Poynting Vector contd…	
	11	Electromagnetic (EM) Energy Density	
	12	Physical Concept of Electromagnetic Field Energy Density, Momentum	

		Density and Angular Momentum Density	
Unit – 2 EM Wave Propagation in Unbounded Media	1	Plane EM waves through vacuum and isotropic dielectric medium	
	2	Plane EM waves through vacuum and isotropic dielectric medium contd…	
	3	Transverse nature of plane EM waves, refractive index and dielectric constant, wave impedance	
	4	Transverse nature of plane EM waves, refractive index and dielectric constant, wave impedance contd…	
	5	Propagation through conducting media, relaxation time, skin depth	
	6	Wave propagation through dilute plasma	
	7	electrical conductivity of ionized gases, plasma frequency, refractive index, skin depth	
	8	electrical conductivity of ionized gases, plasma frequency, refractive index, skin depth contd…	
	9	application to propagation through ionosphere	
	10	application to propagation through ionosphere contd…	
Unit 3 EM Wave in Bounded Media	1	Boundary conditions at a plane interface between two media	
	2	Reflection & Refraction of plane waves at plane interface between two	

		dielectric media-Laws of Reflection & Refraction	
	3	Reflection & Refraction of plane waves at plane interface between two dielectric media-Laws of Reflection & Refraction contd…	
	4	Fresnel's Formulae for perpendicular & parallel polarization cases	
	5	Brewster's law	
	6	Reflection & Transmission coefficients	
	7	Reflection & Transmission coefficients contd…	
	8	Total internal reflection	
	9	evanescent waves	
	10	Metallic reflection (normal Incidence)	
Unit 4 Polarization of Electromagnetic Waves	1	Description of Linear	
	2	Circular and Elliptical Polarization	
	3	Propagation of E.M. Waves in Anisotropic Media	
	4	Symmetric Nature of Dielectric Tensor, Fresnel’s Formula	
	5	Uniaxial and Biaxial Crystals	
	6	Light Propagation in Uniaxial Crystal, Double Refraction	
	7	Polarization by Double Refraction	
	8	Nicol Prism, Ordinary & extraordinary refractive indices	
	9	Production & detection of Plane, Circularly and Elliptically Polarized Light	
	10	Phase Retardation Plates: Quarter-	

		Wave and Half-Wave Plates	
	11	Babinet Compensator and its Uses	
	12	Analysis of Polarized Light	
	13	Optical Rotation, Biot's Laws for Rotatory Polarization	
	14	Fresnel's Theory of optical rotation, Calculation of angle of rotation	
	15	Experimental verification of Fresnel's theory	
	16	Specific rotation	
	17	Laurent's half-shade polarimeter	
Unit 4 Wave Guides	1	Planar optical wave guides	
	2	Planar dielectric wave guide	
	3	Condition of continuity at interface	
	4	Phase shift on total reflection	
	5	Eigenvalue equations	
	6	Phase and group velocity of guided waves	
	7	Phase and group velocity of guided waves contd…	
	8	Field energy and power transmission	
Unit 5 Optical Fibres	1	Numerical aperture	
	2	Step and Graded Indices	
	3	Single and Multimode fibres	

4) Paper: Electricity and Magnetism (PHYSICS-GE-2) – B.Sc. 2nd Semester

Unit	Class	Topic	Remarks
Unit 3 Magnetism	1	Biot-Savart's law and its applications- straight conductor	
	2	circular coil	

	3	Solenoid carrying current	
	4	Divergence and curl of magnetic field	
	5	Magnetic vector potential	
	6	Ampere's circuital law	
	7	Magnetic properties of materials: Magnetic intensity	
	8	magnetic induction	
	9	permeability, magnetic susceptibility.	
	10	Brief introduction of dia-, para-and ferro-magnetic materials	
Unit 4 Electromagnetic Induction	1	Faraday's laws of electromagnetic induction	
	2	Lenz's law	
	3	self and mutual inductance	
	4	L of single coil	
	5	M of two coils	
	6	Energy stored in magnetic field	
Unit 5 Maxwell`s equations and Electromagnetic wave propagation	1	Equation of continuity of current	
	2	Displacement current	
	3	Maxwell's equations	
	4	Poynting vector	
	5	energy density in electromagnetic field	
	6	electromagnetic wave propagation through vacuum	
	7	electromagnetic wave propagation through isotropic dielectric medium	
	8	electromagnetic wave propagation through isotropic dielectric medium contd…	

	9	transverse nature of EM waves	
	10	polarization	

5) Paper: Classical Mechanics (PH-C-IV) – M.Sc. 2nd Semester

Unit	Class	Topic	Remarks
Unit 1	1	Review of Newtonian mechanics, Mechanics of a system of particles	
	2	Constraints of motion and their classification, Generalised co-ordinates	
	3	D' Alembert's principle, Lagrange's equations of motion	
	4	Hamilton's principle, Symmetries and conservation theorems	
	5	Cyclic coordinates. Flows in phase space	
	6	solvable vs integrable, equilibria and linear stability theory	
	7	Bifurcations in Hamiltonian systems	
	8	Bifurcations in Hamiltonian systems (continued)	
Unit 2	1	Motion in a central potential	
	2	Maps	
	3	winding numbers and orbital stability	
	4	Hidden symmetry in the Kepler problem	
	5	Small Oscillations	
	6	Solution of one-dimensional harmonic oscillator problem	
	7	Forced oscillations in one dimension	

	8	Damped harmonic motion in one dimension general solution of the problem	
	9	Displacement as a function of time	
	10	Systems with many degrees of freedom	
	11	Eigen value equation and normal co-ordinates	
	12	Integrable and chaotic oscillations	
	13	Return maps	
	14	Area preserving maps	
	15	Deterministic chaos	
Unit 5	1	Noncanonical flows, flows on spheres	
	2	Local vs complete integrability	
	3	Globally integrable noncanonical flows	
	4	Attractors	
	5	Damped driven Euler-Lagrange dynamics	
	6	Liapunov exponents, Geometry and integrability	
	7	Damped driven Newtonian systems, period doubling	
	8	Fractal and multifractal orbits in phase space	
	9	Strange attractors	
	10	The two frequency problem	

6) Paper: Atomic and Molecular Physics (PH-C-XII) - M.Sc. 4th Semester

Unit	Class	Topic	Remarks

Unit 1 Atomic Spectroscopy	1	Fine structure of hydrogen atom	
	2	relativistic correction	
	3	Lamb shift	
	4	Spectra of alkali atoms	
	5	spinorbit interaction and fine structure in alkali atoms	
	6	spinorbit interaction and fine structure in alkali atoms contd…	
	7	spinorbit interaction and fine structure in alkali atoms contd…	
	8	level scheme of two electron atoms-equivalent and nonequivalent electrons	
	9	ground and excited states of two electron atoms	
	10	interaction energy in L-S and j-j coupling for two electrons	
	11	interaction energy in L-S and j-j coupling for two electrons contd…	
	12	interaction energy in L-S and j-j coupling for two electrons contd…	
	13	Zeeman effect	
	14	Zeeman effect contd…	
	15	Paschen-Back effect	
	16	Stark effect	
	17	hyperfine structure of hydrogen and alkali atoms	
	18	hyperfine structure of hydrogen and alkali atoms contd…	
	19	hyperfine structure of hydrogen and alkali atoms contd…	

	20	spectra of multi electron atoms	
	21	X-ray spectra	
	22	width and shape of spectral lines	
	23	width and shape of spectral lines contd…	
Unit 2 Molecular Spectroscopy	1	Regions of the spectrum	
	2	types of molecules	
	3	Rotational Spectra for rigid and non rigid rotators	
	4	isotopic effect in rotational spectra	
	5	intensity of spectral lines	
	6	information derived from rotational spectra	
	7	microwave spectrometer	
	8	Vibrational spectra for anharmonic oscillator	
	9	vibration-rotation spectra	
	10	Infra-red spectrometer	
	11	Electronic spectra of molecules-BornOppenheimer approximation	
	12	vibrational analysis of electronic band spectra	
	13	vibrational analysis of electronic band spectra contd…	
	14	fine structure of electronic band spectra	
	15	fine structure of electronic band spectra contd…	
	16	Fortrat Diagram	
	17	Raman spectra	

	18	Raman spectrometer	
	19	Photoelectron spectroscopy	
	20	Spin resonance spectroscopy- NMR	
	21	ESR	
	22	Mössbauer spectroscopy	
	23	Mössbauer spectroscopy contd..	
	24	Fourier Transform Spectroscopy	
	25	Fourier Transform Spectroscopy contd..	
Unit 3 Laser Spectroscopy	1	Fundamentals of Lasers-properties	
	2	basic elements	
	3	threshold condition	
	4	rate equation	
	5	population inversion	
	6	Laser resonator and modes	
	7	types of laser- solid state laser	
	8	gas laser	
	9	Semi conductor laser	
	10	applications of laser spectroscopy	
	11	Laser Cooling	
	12	Ammonia Masers-two level and three level	

Period: July-December 2022

1) Paper: Thermal Physics (PHYSICS - C VI) - B.Sc. 3rd Semester (H)

Unit	Class	Topic	Remarks
Unit 1 Zeroth and First Law of Thermodynamics	1	Extensive and intensive Thermodynamic Variables, Thermodynamic Equilibrium	
	2	Zeroth Law of Thermodynamics & Concept of Temperature, Concept of Work & Heat	
	3	State Functions, First Law of Thermodynamics and its differential form	
	4	Internal Energy	
	5	First Law & various processes	
	6	General Relation between CP and CV	
	7	Work Done during Isothermal and Adiabatic Processes	
	8	Compressibility and Expansion Coefficient	
Unit 2 Second Law of Thermodynamics	1	Reversible and Irreversible process with examples	
	2	Conversion of Work into Heat and Heat into Work	
	3	Heat Engines	
	4	Carnot's Cycle	
	5	Carnot engine & efficiency	
	6	Refrigerator & coefficient of performance	
	7	2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and	

		their Equivalence	
	8	2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence (continued)	
	9	Carnot's Theorem	
	10	Applications of Second Law of Thermodynamics: Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale	
Unit 3 Entropy	1	Concept of Entropy, Clausius Theorem, Clausius Inequality	
	2	Second Law of Thermodynamics in terms of Entropy, Entropy of a perfect gas	
	3	Principle of Increase of Entropy	
	4	Entropy Changes in Reversible and Irreversible processes with examples, Entropy of the Universe	
	5	Principle of Increase of Entropy	
	6	Temperature–Entropy diagrams for Carnot's Cycle	
	7	Third Law of Thermodynamics. Unattainability of Absolute Zero	
Unit 4 Thermodynamic Potentials	1	Thermodynamic Potentials: Internal Energy, Enthalpy	
	2	Helmholtz Free Energy, Gibb's Free Energy	
	3	Surface Films and Variation of Surface Tension with Temperature	
	4	Magnetic Work	
	5	Cooling due to adiabatic demagnetization	
	6	First and second order Phase Transitions with examples	
	7	Clausius Clapeyron Equation and Ehrenfest equations	
Unit 5 Maxwell's	1	Derivations and applications of Maxwell's Relations	
	2	Clausius Clapeyron equation	
	3	Values of Cp-Cv	

Thermodynamic Relations	4	TdS Equations	
	5	Joule-Kelvin coefficient for Ideal and Van der Waal Gases	
	6	Energy equations	
	7	Change of Temperature during Adiabatic Process	
Unit 6 Kinetic Theory of Gases Distribution of Velocities	1	Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas and its Experimental Verification	
	2	Doppler Broadening of Spectral Lines and Stern's Experiment	
	3	Mean Speed	
	4	RMS and Most Probable Speeds	
	5	Degrees of Freedom	
	6	Law of Equipartition of Energy	
	7	Specific heats of Gases	
Unit 7 Molecular Collisions	1	Mean Free Path, Collision Probability, Estimates of Mean Free Path	
	2	Viscosity, Thermal Conductivity	
	3	Diffusion	
	4	Brownian Motion and its Significance	
Unit 8 Real Gases	1	Behavior of Real Gases: Deviations from the Ideal Gas Equation	
	2	The Virial Equation. Andrew's Experiments on CO2 Gas.	
	3	Critical Constants	
	4	Continuity of Liquid and Gaseous State, Vapour and Gas	
	5	Boyle Temperature	
	6	Van der Waal's Equation of State for Real Gases	
	7	Values of Critical Constants. Law of Corresponding States. Comparison with Experimental Curves	
	8	P-V Diagrams. Joule's Experiment. Free Adiabatic Expansion of a Perfect Gas.	
	9	Joule-Thomson Porous Plug Experiment. Joule- Thomson Effect for Real and Van der Waal Gases.	

	10	Temperature of Inversion. Joule- Thomson Cooling	

2) Paper: Quantum Mechanics & Applications (PHYSICS – C XI) - B.Sc. 5th Semester (H)

Unit	Class	Topic	Remarks
Unit 1 Time dependent Schrodinger equation	1	Time dependent Schrodinger equation and dynamical evolution of a quantum state; Properties of Wave Function.	
	2	Interpretation of Wave Function Probability and probability current densities in three dimensions; Conditions for Physical Acceptability of Wave Functions.	
	3	Normalization. Linearity and Superposition Principles.	
	4	Eigenvalues and Eigenfunctions. Position, momentum and Energy operators	
	5	commutator of position and momentum operators; Expectation values of position and momentum.	
	6	Wave Function of a Free Particle.	
Unit 2 Time independent Schrodinger equation	1	Hamiltonian, stationary states and energy eigenvalues	
	2	expansion of an arbitrary wavefunction as a linear combination of energy eigenfunctions	
	3	General solution of the time dependent Schrodinger equation in terms of linear combinations of stationary	

		states	
	4	Application to spread of Gaussian wavepacket for a free particle in one dimension	
	5	Application to spread of Gaussian wavepacket for a free particle in one dimension (continued)	
	6	Wave packets	
	7	Fourier transforms and momentum space wavefunction	
	8	Fourier transforms and momentum space wavefunction (continued)	
	9	Position-momentum uncertainty principle	
	10	Position-momentum uncertainty principle (continued)	
Unit 3 General discussion of bound states in an arbitrary potential	1	Continuity of wave function	
	2	Boundary condition	
	3	Emergence of discrete energy levels	
	4	Application to one-dimensional problem-square well potential	
	5	Quantum mechanics of simple harmonic oscillator	
	6	Quantum mechanics of simple harmonic oscillator (continued)	
	7	Energy levels and energy eigen functions using Frobenius method	
	8	Energy levels and energy eigen functions using Frobenius method (continued)	

	9	Hermite polynomials	
	10	Hermite polynomials (continued)	
	11	ground state	
	12	zero point energy & uncertainty principle	
Unit 4 Quantum theory of hydrogen-like atoms	1	Time independent Schrodinger equation in spherical polar coordinates	
	2	Separation of variables for second order partial differential equation	
	3	Separation of variables for second order partial differential equation (continued)	
	4	Angular momentum operator & quantum numbers	
	5	Radial wave functions from Frobenius method	
	6	Radial wave functions from Frobenius method (continued)	
	7	Radial wave functions from Frobenius method (continued)	
	8	Shapes of the probability densities for ground & first excited states	
	9	Orbital angular momentum quantum numbers l and m	
	10	s, p, d... shells	
Unit 5 Atoms in Electric & Magnetic Fields	1	Electron angular momentum	
	2	Space quantization	
	3	Electron Spin and Spin Angular Momentum	
	4	Larmor’s Theorem	
	5	Spin Magnetic Moment	

	6	Stern-Gerlach Experiment	
	7	Zeeman Effect: Electron Magnetic Moment and Magnetic Energy	
	8	Gyromagnetic Ratio and Bohr Magneton	
Unit 6 Atoms in External Magnetic Fields	1	Normal Zeeman Effect	
	2	Anomalous Zeeman Effect	
	3	Paschen Back Effect	
	4	Stark Effect	
Unit 7 Many electron atoms	1	Pauli's Exclusion Principle	
	2	Symmetric & Antisymmetric Wave Functions, Periodic table	
	3	Fine structure	
	4	Spin orbit coupling	
	5	Spectral Notations for Atomic States	
	6	Total angular momentum	
	7	Vector Model	
	8	Spin-orbit coupling in atoms-L-S and J-J couplings	
	9	Hund's Rule	
	10	Term symbols, Spectra of Hydrogen and Alkali atoms (Na etc.)	

3) Paper: Thermal Physics and Statistical Mechanics (PHYSICS – GE - 3) - B.Sc. 3rd Semester (G)

Unit	Class	Topic	Remarks
Unit 1 Laws of Thermnodynamics	1	Zeroth Law of thermodynamics and temperature	
	2	First law and internal energy	
	3	First law and internal energy	

		(continued)	
	4	Conversion of heat into work	
	5	Various Thermodynamical Processes	
	6	Various Thermodynamical Processes (continued)	
	7	Applications of First Law: General Relation between CP and CV	
	8	Applications of First Law: General Relation between CP and CV (continued)	
	9	Work Done during Isothermal and Adiabatic Processes	
	10	Work Done during Isothermal and Adiabatic Processes (continued)	
	11	Compressibility and Expansion Coefficient	
	12	Compressibility and Expansion Coefficient (continued)	
	13	Reversible and irreversible processes	
	14	Second law and Entropy	
	15	Second law and Entropy (continued)	
	16	Carnot's cycle & theorem	
	17	Carnot's cycle & theorem (continued)	
	18	Entropy changes in reversible processes	
	19	Entropy changes in irreversible processes	
	20	Entropy-temperature diagrams	
	21	Third law of thermodynamics	
	22	Unattainability of absolute zero	

Unit 3 Kinetic Theory of Gases	1	Derivation of Maxwell's law of distribution of velocities and its experimental verification	
	2	Mean free path (Zeroth Order)	
	3	Transport Phenomena: Viscosity	
	4	Transport Phenomena: Viscosity (continued)	
	5	Conduction	
	6	Diffusion (for vertical case)	
	7	Diffusion (for vertical case) (continued)	
	8	Law of equipartition of energy	
	9	Applications to specific heat of gases	
	10	Monoatomic and diatomic gases.	
Unit 5 Statistical Mechanics	1	Phase space	
	2	Macrostate and Microstate	
	3	Entropy and Thermodynamic probability	
	4	Maxwell Boltzmann law - distribution of velocity	
	5	Maxwell Boltzmann law - distribution of velocity (continued)	
	6	Quantum statistics	
	7	Fermi-Dirac distribution law	
	8	Fermi-Dirac distribution law (continued)	
	9	Electron gas	
	10	Bose-Einstein distribution law	
	11	Photon gas	
	12	Comparison of three statistics	

4) Paper: Quantum Mechanics-I (PH-C-III) - M.Sc. 1st Semester

Unit	Class	Topic	Remarks
Unit 1 Fundamental Concepts	1	Overview of wave mechanics	
	2	Schrödinger equation	
	3	application to some important physical problems: particle in a box	
	4	simple harmonic oscillator	
	5	simple harmonic oscillator contd…	
	6	delta function potential	
	7	delta function potential contd..	
	8	spherical well potential	
	9	spherical well potential contd…	
	10	hydrogen atom	
	11	hydrogen atom contd..	
	12	Kets, Bras and Operators	
	13	Kets, Bras and Operators contd…	
	14	Base Kets and Matrix Representations	
	15	Base Kets and Matrix Representations contd…	
	16	Base Kets and Matrix Representations contd…	
	17	Measurements	
	18	Observables and Uncertainty Relations	
	19	Observables and Uncertainty Relations contd…	
	20	Generalized uncertainty principle	
	21	Change of basis	
	22	Change of basis contd…	
	23	Wave functions in Position and	

		Momentum Space	
	24	Wave functions in Position and Momentum Space contd…	
	25	Wave functions in Position and Momentum Space contd…	
Unit 2 Quantum Dynamics	1	Schrödinger picture	
	2	Heisenberg picture	
	3	Time evolution and the Schrödinger equation	
	4	Heisenberg equation	
	5	time evolution of the simple harmonic oscillator	
	6	Symmetries	
	7	Conservation laws and Degeneracy	
	8	Conservation laws and Degeneracy contd…	
	9	Spatial and Time translation	
	10	Parity	
	11	Time reversal	
	12	Density operators	
	13	Density operators contd…	
	14	Pure versus Mixed Ensembles	
	15	Pure versus Mixed Ensembles contd…	
Unit 3 Angular Momentum	1	Rotation	
	2	Angular Momentum and Unitary groups	
	3	commutation relations	
	4	Eigenvalues and Eigenstates of Angular Momentum	
	5	Ladder operators and their matrix	

		representations	
	6	Ladder operators and their matrix representations contd…	
	7	the Stern Gerlach Experiment	
	8	Spin angular momentum and Pauli matrices	
	9	Addition of Angular momentum	
	10	Clebcsh Gordon Coefficients	
	11	Clebcsh Gordon Coefficients contd…	
	12	Clebcsh Gordon Coefficients contd…	
	13	Identical particles	
	14	Many particle systems	
	15	Symmetric and anti-symmetric wave functions	
	16	Slater's determinant	
	17	Pauli's exclusion principle	
	18	Wigner-Eckart theorem	
	19	Spherical tensors	
	20	Spherical tensors contd…	

5) Paper: Electrodynamics (PH-C-VIII) - M.Sc. 3rd Semester

Unit	Class	Topic	Remarks
Unit 1	1	Propagation of electromagnetic waves in different media	
	2	Dispersion	
	3	Frequency dependence of σ, μ and ε	
	4	Frequency dependence of σ, μ and ε (continued)	Tutorial
	5	Dispersion in non-conductors	
	6	Dispersion in non-conductors	Tutorial

		(continued)	
	7	Anomalous dispersion	Tutorial
	8	Free electrons in conductors and plasma	
	9	Wave Guides	
	10	TE waves in rectangular wave guide	
	11	TE waves in rectangular wave guide (continued)	Tutorial
	12	Coaxial transmission lines	
	13	Boundary value problems in spherical coordinate	
Unit 2	1	Electromagnetic radiation: Retarded potentials	
	2	Electromagnetic radiation: Retarded potentials (continued)	Tutorial
	3	Electric dipole radiation	
	4	Electric dipole radiation (continued)	Tutorial
	5	Radiation from an arbitrary distribution of charges and current	
	6	Radiation from an arbitrary distribution of charges and current (continued)	Tutorial
	7	Lienard-Wiechert potentials	
	8	Lienard-Wiechert potentials (continued)	Tutorial
	9	Fields due to uniformly moving charge	
	10	Fields due to uniformly moving charge (continued)	Tutorial
	11	Fields due to accelerated charge	

	12	Fields due to accelerated charge (continued)	Tutorial
	13	Linear and circular acceleration	
	14	Linear and circular acceleration (continued)	Tutorial
	15	Angular distribution of radiated power	
	16	Angular distribution of radiated power (continued)	Tutorial
	17	Bremhstrahlung and Synchrotron radiation	
	18	Bremhstrahlung and Synchrotron radiation (continued)	Tutorial
	19	Radiation reaction	
	20	Radiation reaction (continued)	
	21	Abraham-Lorentz formula	
	22	Abraham-Lorentz formula (continued)	Tutorial
Unit 3	1	Structure of space-time	
	2	Structure of space-time (continued)	
	3	Structure of space-time (continued)	Tutorial
	4	Four vectors and Lorentz transformation	
	5	Four vectors and Lorentz transformation (continued)	Tutorial
	6	Four vectors and Lorentz transformation (continued)	
	7	Proper time and velocity	
	8	Proper time and velocity (continued)	Tutorial
	9	Relativistic energy and momentum	
	10	Relativistic energy and momentum (continued)	

	11	Relativistic energy and momentum (continued)	Tutorial
	12	Magnetism as relativistic phenomena	
	13	Magnetism as relativistic phenomena (continued)	Tutorial
	14	Potential formulation of relativistic electrodynamics	
	15	Potential formulation of relativistic electrodynamics (continued)	Tutorial
	16	Potential formulation of relativistic electrodynamics (continued)	Tutorial
	17	Electromagnetic field tensor	
	18	Electromagnetic field tensor (continued)	Tutorial
	19	Electromagnetic field tensor (continued)	
	20	Dual tensor	
	21	Dual tensor (continued)	Tutorial
	22	Dual tensor (continued)	
	23	Covariant formulation of electrodynamics	
	24	Covariant formulation of electrodynamics (continued)	Tutorial
	25	Covariant formulation of electrodynamics (continued)	

COURSE PLAN
January 2023 to May 2023
Name of teacher: Dr. Dimpy Das, Depat. Of Botany

Course: B. Sc. (CBCS)
Semester: 2nd Semester (Honours)
Name of Paper: Archegoniate
Units Assigned: 2 (Unit 4 and 5)
Marks Assigned: 15

Class	Topic/Unit	Remarks
6	Unit 4: Pteridophytes General characteristics, classification; early land plants (Psilophyton and Rhynia).	1. Explanation by chalk and talk method, 2. PPT classes 3. Will provide study materials.
14	Unit 5: Type studies – Pteridophytes Classification (up to family). Morphology, anatomy and reproduction of Psilotum, Selaginella, Equisetum and Ophioglossum, Marselia. Apospory and apogamy, heterospory and seed habit, telome theory, stelar evolution, Ecological and economic importance.	

Semester: 2nd Semester (Generic)
Name of Paper: Plant physiology and metabolism
Units Assigned: 2 (Unit 8 and 9)
Marks Assigned: 15

Class	Topic/Unit	Remarks
6	Unit 8: Plant growth regulators Discovery and physiological roles of auxins, gibberellins, cytokinins, ABA, ethylene.	1. Explanation by chalk and talk method, 2. PPT classes 3. Will provide study materials.
6	Unit 9: Plant response to light and temperature Photoperiodism (SDP, LDP, Day neutal plants); phytochrome (discovery and structure), red and far red light response on photomorphogenesis; Vernalization.	

Semester: 6th Semester (Honours)
Name of Paper: BC614T; Plant Biotechnology
Units Assigned: Whole Paper
Marks Assigned: 53

Class	Topic/Unit	Remarks
10	**Unit 1: Plant tissue culture** Historical perspective; composition of media; nutrient and hormone requirements (role of vitamins and hormones); totipotency; organogenesis; embryogenesis (somatic and zygotic); protoplast isolation, culture and fusion; tissue culture applications (micropropagation, androgenesis, virus elimination, secondary metabolite production, haploids, triploids and hybrids; cryopreservation; germplasm conservation).	1. Explanation by chalk and talk method, 2. PPT classes 3. Will provide study materials. 4. Students seminar
6	**Unit 2: Recombinant DNA technology** Restriction endonucleases (History, types I-IV, biological role and application); restriction mapping (Linear and circular); cloning vectors; prokaryotic (pUC18 and pUC19, pBR322, Ti plasmid, BAC); Lambda phage, M13 phagemid, cosmid, shuttle vector; eukaryotic vectors (YAC).	
8	**Unit 3: Gene cloning** Recombinant DNA, bacterial transformation and selection of recombinant clones, PCR-mediated gene cloning; gene construct; construction of genomic and cDNA libraries, screening DNA libraries to obtain gene of interest by genetic selection; complementation, colony hybridization.	
5	**Unit 4: Methods of gene transfer** Agrobacterium-mediated, direct gene transfer by electroporation, microinjection, microprojectile bombardment; selection of transgenics- selectable marker and reporter genes (Luciferase, GUS, GFP).	
8	**Unit 5: Application of biotechnology** Pest resistant (Bt-cotton); herbicide resistant plants (RoundUp Ready soybean); transgenic crops with improved quality traits (Flavr Savr tomato, golden rice); improved horticultural varieties (Moondust carnations); role of transgenics in bioremediation (superbug); edible vaccines; industrial enzymes (Aspergillase, Protease, Lipase); genetically engineered products – Human Growth Hormone; Humulin; Biosafety concerns.	

Course: M. Sc.

Semester: 2nd semester
Name of Paper: LSC203; Taxonomy, Evolution and Biodiversity
Units Assigned: Section-B: Unit 3
Marks Assigned: 10

Class	Topic/Unit	Remarks
6	**Section – B** **Unit 3:** Emergence of evolutionary thinking: Lamarck, Darwin: variation, adaptation, natural selection. Genes in population and Hardy – Weinberg equilibrium, forces of evolution, mutation, migration, non-random mating, genetic drift, natural selection (Fitness).	1. Explanation by chalk and talk method, 2. Will provide study materials.

Semester: 4th semester
Name of Paper: LSC401; Taxonomy of angiosperm and plant improvement
Units Assigned: Unit 3 and 4
Marks Assigned: 37

Class	Topic/Unit	Remarks
8	Unit 3: Conventional methods of crop improvement in autogamous, allogamous and vegetatively propagated crops: selection, introduction, acclimatization and hybridisation.	1. Explanation by chalk and talk method, 2. Will provide study materials.
7	Unit 4: Non-conventional methods of crop improvement: mutation, *in vitro* culture and their application in crop improvement; concept of breeding for disease resistance; dwarfing genes and golden rice.	

Semester: 4th semester
Name of Paper: LSC403; Plant physiology
Units Assigned: Unit 4
Marks Assigned: 20

Class	Topic/Unit	Remarks
14	Unit 4: Growth and development: Introduction, definition of growth, development and differentiation, growth phases; Physiology of flowering; Photoperiodism and vernalization; Phytochrome concept and role in flowering; Plant growth hormones: auxins, gibberellins, cytokinins, ethylene and abscissic acid, their physiological role; Seed germination and dormancy; Senescence and abscission.	1. Explanation by chalk and talk method, 2. Will provide study materials.

DIGBOI COLLEGE, DIGBOI

Course Plan (Even Semesters)

Name of the Teacher- Dulu Moni Das

COURSE PLAN: January 2023 to May, 20232023

DEPARTMENT: BOTANY

Course –Honours / Generic – Honours
Class/Semester- 2nd semester (H)
Paper code:-203 T
Name of the Paper- Mycology & Phytopathology
Units Assigned- 1, 2, 3, 4, 5, 6.
Marks Assigned- 53

Class	Topic/ Unit	Remarks
1.	General Characters of fungi & affinity with plants & animals.	Explanations
2.	Thallus organization & cell wall composition of fungi.	Notes
3.	Nutrition & Classification of fungi.	Explanations
4.	General characters of Chytridiomycetes	Explanations
5.	Zygomycetes, reproduction & life cycle of *Rhizopus* sp.	Explanations
6.	Ascomycetes , life cycle of *Saccharomycetes* sp.	Explanations
7.	Life cycle of *Aspergillus* sp., *Penecillium* sp.	Explanations
8.	Life cycle of *Neurospora* sp. & *Peziza* sp.	Explanations
9.	General character of Basidiomycetes.	Explanations
10.	Life cycle of *Puccinia* sp.	Explanations
11.	Life cycle of *Ustilago* sp.	Explanations
12.	Life cycle of *Agaricus*.	Explanations
13.	Bioluminescence & Mushroom Cultivation.	Notes
14.	General characters of Oomycetes	Explanations
15.	Life cycle of *Phytophthora* sp.	Explanations
16.	Life cycle of *Albugo* sp.	Explanations
17.	General account & classification of Mycorrhiza.	Explanations
18.	Mycorrhiza; use & economic importance	Notes
19.	General account & classification of Lichen	Explanations
20.	economic importance of Lichen	Notes
21.	Applied mycology.	Explanations
22.	Applied mycology	Explanations
23.	Introduction & terms used in phytopathology	Explanations
24.	Host parasite interaction.	Notes
25.	Methods to control plant diseases.	Notes
26.	Viral diseases of plants	Explanations
27.	Bacterial diseases of plants	Explanations
28.	Fungal diseases of plants	Explanations
29.	Fungal diseases of plants	Explanations
30.	Fungal diseases of plants	Explanations

DIGBOI COLLEGE, DIGBOI

Course Plan (Even Semesters)

Name of the Teacher- Dulu Moni Das

Course –Honours / Generic:– Honours
Class/Semester:- 2nd semester (H).
Paper code:-203 T
Name of the Paper- Mycology & Phytopathology
Units Assigned- Practical
Marks Assigned- 32

Class	Topic/Unit	Remarks
1.	Practical on Fungi.	5 Specimens
2.	Lichen morphology	3 Specimens
3.	Phytopathology	5 Specimens

Course –Honours / Generic – Generic
Class/Semester- 2nd semester (G)
Paper code:-BNC202T
Name of the Paper- Plant Physiology & Metabolism
Units Assigned- 1, 2, 5.
Marks Assigned- 15

Class	Topic/ Unit	Remarks
1.	Water in relation to plant	Explanations
2.	Water potential & its components	Explanations
3.	Transpiration	Explanations
4.	Signification of Transpiration	Notes
5.	Root pressure & Guttation	Explanations
6.	Factors affecting transpiration	Explanations
7.	Mineral nutrition	Explanations
8.	Macro & micro elements	Explanations
9.	Role of essential elements	Explanations
10.	Transport of ions across cell membrane	Explanations
11.	Active & Passive transport	Explanations
12.	Carrier molecules, channels & pumps	Explanations
13.	Respiration, Glycolysis	Explanations
14.	Anaerobic respiration	Explanations
15.	TCA cycle	Explanations
16.	Oxidative phosphorylation	Explanations
17.	Pentose Phosphate Pathway	Explanations

DIGBOI COLLEGE, DIGBOI

Course Plan (Even Semesters)

Name of the Teacher- Dulu Moni Das

Course –Honours / Generic – Generic
Paper code:- BNC202P Name of the Paper- Plant Physiology & Metabolism
Units Assigned- Practical
Marks Assigned- 12

Class	Topic/ Unit	Remarks
1.	Experiment on Plasmolysis	Practical
2.	Demonstration on Hill reaction	Practical
3.	Experiment on CO_2 evolution during photosynthesis	Practical
4	Compare in rate of respiration in different plants	Practical

Course – Honours
Paper Code:-403
Class/Semester- 4th semester (M)
Name of the Paper- Cell Biology & Modern Laboratory Technique (Theory)
Units Assigned- 1
Marks Assigned- 16+4=20

Class	Topic/ Unit	Remarks
1.	Concept on Microscopy	Explanations, oral assessment
2.	Types of Microscopes, Working principals & Use	Explanations
3.	Separation techniques of Biomolecules	Explanation
4.	Chromatography types,	Explanation
5.	Centrifugation & Gel filtration	Explanation
6.	Spectrophotometry	Explanation
7.	Colorimetry	Explanation
8.	pH meter, BOD incubator, Auticlave, LAF Chamber, Hot Air Oven	Explanation
9.	Knowledge & Application of Computer in Biological science	Notes

DIGBOI COLLEGE, DIGBOI

Course Plan (Even Semesters)

Name of the Teacher- Dulu Moni Das

Course – Honours
Paper Code:-404
Class/Semester- 4th semester (H)
Name of the Paper- Cell Biology & Modern Laboratory Technique (Practical)
Marks Assigned- 10

Class	Topic/ Unit	Remarks
1.	Description of Instruments used in Biological Science	Demonstration
2.	Separation of Chlorophyll by Paper Chromatography	Practical
3.	Separation of amino acids by Paper Chromatography	Practical

Course – Generic
Paper Code:-401
Class/Semester- 4th semester (G)
Name of the Paper- Plant Physiology & Economic Botany (Theory)
Units Assigned- 1, 2, 3, 4, 5, 6
Marks Assigned-: 32+8=40

Class	Topic/ Unit	Remarks
1.	Water relation to Plant, Diffusion, Osmosis & imbibitions.	Explanations, Oral Assessment
2.	Absorption of Water	Explanation & Notes
3.	Ascent of Sap	Explanation & Notes
4.	Transpiration	Explanation & Notes
5.	Mineral nutrition	Explanation & Notes
6.	Translocation of Solute	Explanation
7.	Photosynthesis	Explanation, Oral Assessment
8.	Photosynthesis	Explanation
9.	Photosynthesis	Notes
10.	Respiration in Plants	Explanation
11.	Respiration in Plants	Notes
12.	Phytohormones	Explanation & Notes
13.	Phytohormones	Explanation & Notes
14.	Physiology of Flowering	Explanation
15.	Physiology of Flowering	Notes
16.	Plant movement	Explanation
17.	Plant movement	Notes

DIGBOI COLLEGE, DIGBOI

Course Plan (Even Semesters)

Name of the Teacher- Dulu Moni Das

Paper Code:-402
Class/Semester- 4th semester (G)
Name of the Paper- Plant Physiology & Economic Botany (Theory)
Marks Assigned- 20=4=24

Class	Topic/ Unit	Remarks
1.	Experiment on Imbibitions	Practical
2.	Experiment on Plasmolysis	Practical
3.	Experiment on Transpiration	Practical
4.	Experiment on Transpiration	Practical
5.	Experiment on Photosynthesis	Practical
6.	Experiment on Photosynthesis	Demonstration

Course –Honours / Generic –Major
Class/Semester- 6th semester (H)
Paper code:- 606 Name of the Paper- Agrotechnology & Sustainable utilization of Plants.
Units Assigned- 1, 2, 3, 4, 5, 6.
Marks Assigned- 48

Class	Topic/ Unit	Remarks
1.	Centre of origin, Vavilov's concept.	Explanations
2.	Ethnobotany and its importance in Indian context.	Explanations
3.	Indigenous Knowledge System.	Explanations
4.	Agrotechnology & economic importance of cereals.	Notes
5.	Agrotechnology & economic importance of oil yielding plants.	Notes
6.	Agrotechnology & economic importance of Pulses.	Notes
7.	Agrotechnology & economic importance of beverages.	Notes
8.	Agrotechnology & economic importance of Vegetables.	Notes
9.	Agrotechnology & economic importance of Spices & condiments.	Notes
10.	Agrotechnology & economic importance of Spices & condiments.	Notes
11.	Agrotechnology & economic importance of timber yielding plants.	Notes
12.	Agrotechnology & economic importance of Aromatic & petrocrops.	Notes
13.	Agrotechnology & economic importance of Aromatic & petrocrops	Notes
14.	Domestication of Plants.	Explanations
15.	Germplasm & gene bank	Explanations
16.	Biofertilizer & biopesticides.	Explanations
17.	Organic farming.	Explanations
18.	Use of lower group of Plants.	Explanations
19.	Use of lower group of Plants.	Explanations

DIGBOI COLLEGE, DIGBOI

Course Plan (Even Semesters)

Name of the Teacher- Dulu Moni Das

Course –Honours / Generic –Major
Class/Semester- 5th semester (M)
Paper code:-607
Name of Paper- Agrotechnology & Sustainable utilization of Plants.
Units Assigned- Practical
Marks Assigned- 32

Class	Topic/ Unit	Remarks
1.	Determination of pH of soil.	Practical
2.	Determination of WHC of soil.	Practical
3.	Determination of soil moisture.	Practical
4.	Determination of protein, fat & starch content of plant sample.	Practical
5.	Study of botanical character of useful plants.	15 nos.

Course –Honours / Generic –Honours
Class/ Semester- 6th semester (H)
Paper code:-601
Name of the Paper- Ecology & phytogeography
Units Assigned- 1, 2, 3, 4, 5, 6
Marks Assigned- 48

Class	Topic/ Unit	Remarks
1.	Basic concept & introduction to ecology	Explanations
2.	Biotic & abiotic factors & interactions	Explanations
3.	Structure of Ecosystem	Explanations
4.	Function of Ecosystem	Explanations
5.	Succession in plants	Explanations
6.	Adaptation in plants	Explanations
7.	Pollution of air, water & soil	Explanations
8.	Green house effect	Explanations
9.	Ozone layer depletion	Explanations
10.	Deforestation, its cause & effects	Explanations
11.	Natural resource management	Explanations
12.	IUCN red list category	Explanations
13.	WWC, IUCN, NBWL, NBA	Explanations
14.	Concept on Biodiversity	Explanations
15.	Conservation Biology, Ex situ & in situ conservation	Explanations

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan (Session January-May, 2023)

Name of the Teacher: Dr. Jatindra Lahkar

Course –Honours / Generic: Honours

Class/Semester: Second Semester

Name of the Paper: Differential Equations(P) Paper Code:C4

Units Assigned: Complete Paper

Marks Assigned: Theory – 60 and Practical – 20.

Class	Topic/ Unit	Remarks
1	**Unit-1:** Differential equation and Classification.	
2	Formation of differential equations and examples	
3	General, Particular, implicit and explicit solution of DE.	
4	Revision of HS Differential equations.	
5	Exact Differential Equations and examples, Class-1	
6	Exact Differential Equation and examples, Class-2	
7	Different rules of Integrating Factor.	
8	Method of separation of variable and Homogeneous DE	
9	Homogeneous DE and example	
10	Equation reducible to homogeneous and LDE	
11	Linear DE and examples	
12	Bernoulli's Equation, DE reducible to LDE	
13	Bernoulli's equation and examples, Class-1	
14	Bernoulli's equation and examples, Class-1	
15	Special integrating factors and transformations, Class-1	
16	Special integrating factors and transformations, Class-2	
17	**Unit-2:** Application of DE and Model Formulation	
18	Application of first order DE	
19	General Compartmental Model, Balance law	
20	Formulation of the differential equation for exponential decay model.	
21	Lake pollution model,	
22	Lake pollution model, problem of salt dissolved in a tank	
23	Lake Burley Griffin Case Study	
24	Drug assimilation model case of a single cold pill.	
25	Drug assimilation into the blood (case of a course of cold pills)	
26	Examples of Drug assimilation model	
27	Exponential growth of population.	
28	Population growth model	
29	Limited growth with harvesting	
30	Examples Limited growth with harvesting	

31	Epidemic model of influenza, formulation of DE	
32	Epidemic model of influenza, solution	
33	Predators and prey Model	
34	Model of battle	
35	**Unit-3:** Solution of homogeneous equation of second order	
36	Linear combinations of the solution.	
37	Solution of homogeneous equation of second order, Principle of super position-1	
38	Solution of homogeneous equation of second order, Principle of super position-1	
39	Wronskian, definition for two and n-functions.	
40	Wronskian: its properties and applications with examples-1	
41	Wronskian: its properties and applications with examples-2	
42	Examples and Theorems of linearly dependent and independent solution of HLDE, Class-1	
43	Examples and Theorems of linearly dependent and independent solution of HLDE, Class-2	
44	Linear second order HLDE (reduction of order), Class-1	
45	Linear second order HLDE (reduction of order), Class-2	
46	Homogeneous Linear equation with constant coefficients.	
47	Solution of non-homogeneous DE using method of undetermined coefficients-Class-1	
48	Solution of non-homogeneous DE using method of undetermined coefficients -Class-2.	
49	Euler equations.	
50	Method of variation of parameters-Class-1	
51	Method of variation of parameters-Class-2	
52	**Unit-4:** Equilibrium solutions and Equilibrium points	
53	Interpretation of Phase plane.	
54	Phase Plane analysis -1 compartmental model	
55	Phase Plane analysis -2: Predator and Prey Model	
56	Phase Plane analysis -3: Lotka-Voltera Predator and Prey Model.	
57	Phase Plane analysis -4: Battle model.	
58	Phase Plane analysis -4: Epidemic model of influenza.	
59	Revision of Unit-4	
60	**Practical: MatLab Programming, Basic data types.**	Practical Class 2 hours.
61	Plotting of second order solution family of differential equation	
62	Plotting of third order solution family of differential equation.	
63	Growth model (exponential case only).	
64	Decay model (exponential case only).	
65	Lake pollution model (with constant/seasonal flow and pollution concentration).	
66	Case of single cold pill and a course of cold pills.	
67	Limited growth of population (with and without harvesting).	
68	Predatory-prey model (basic Volterra model, with density dependence)	
69	Predatory-prey model (effect of DDT, two prey one predator).	
70	Epidemic model of influenza (basic epidemic model)	

71	Epidemic model of influenza (contagious for life, disease with carriers	
72	Battle model (basic battle model, jungle warfare, long range weapons)	
73	Battle model (long range weapons)	
74	Plotting of recursive sequences	
75	Study the convergence of sequences through plotting	
76	Verify Bolzano-Weierstrass theorem through plotting of sequences and hence identify convergent sub-sequences from the plot	
77	Study the convergence/divergence of infinite series by plotting their sequences of partial sum	
78	Cauchy's root test by plotting nth roots	
79	Ratio test by plotting the ratio of nth and (n+1)th term	
80		

DIGBOI COLLEGE, DIGBOI

Department of Mathematics

Course Plan (Session January-May, 2023)

Name of the Teacher: Dr. Jatindra Lahkar

Course –Honours / Generic: Honours

Class/Semester: Six Semester

Name of the Paper: Hydro Mechanics: Paper DSE-3.1

Units Assigned: Complete Paper

Marks Assigned: Theory – 80.

Class	Topic/ Unit	Remarks
1	**Unit-1:** Kinematics introduction.	
2	Types of fluids and their properties.	
3	Velocity of a fluid at a point and examples.	
4	Eulerian and Lagrangian method, stream lines and path lines and examples.	
5	Steady and unsteady flows, velocity potential.	
6	Tutorial	
7	Rotational and irrotational motions, local and particle rate of change.	
8	Equation of continuity in cartesian form.	
9	Equation of continuity in vector form.	
10	Equation of continuity examples.	
11	Equation of continuity examples.	
12	Tutorial	
13	Acceleration of a fluid at a point and examples.	
14	General analysis of fluid motion	
15	**Unit-2: Equation of motion introduction**	
16	Euler's equation of motion in cartesian form	
17	Euler's equation of motion in vector form	
18	Tutorial	
19	Bernoullis equation and examples	
20	Steady motion under conservative forces,	
21	Impulsive motion.	
22	Circulation, Kelvin's circulation theorem.	
23	Examples on Circulation.	
24	Tutorial	
25	**Unit-3: General theory of irrotational motion introduction**	
26	Potential flow, deductions from Green's theorem.	
27	Kinetic energy of a liquid,	
28	Uniqueness theorems, Kelvin's minimum energy theorem,	

29	Mean value of velocity potential.	
30	Tutorial	
31	**Unit-4: Fluid pressure**. Introduction	
32	Definition and examples of Density and specific gravity.	
33	Theorems on fluid pressure under gravity.	
34	Rate of variation of pressure.	
35	Differential equation of pressure.	
36	Tutorial	
37	Condition of equilibrium of floating body.	
38	Equi-pressure surfaces and lines of force.	
39	Curves of equi-pressure.	
40	Curves of equi-density.	
41	Examples	
42	Tutorial	
43	**Unit-5: Resultant Pressure and Centre of Pressure**	
44	Definition of Resultant Pressure and Centre of Pressure.	
45	Determination of centre of pressure of parallelogram.	
46	Determination of centre of pressure of triangle.	
47	Determination of centre of pressure of circle.	
48	Tutorial	
49	Determination of centre of pressure of different examples.	
50	Thrust on curved surface.	
51	Example on thrust on curved surface.	
52	**Unit-6**: Equilibrium and Stability of Floating Bodies.	
53	Condition of equilibrium of floating bodies.	
54	Examples	
55	Stable, Unstable and Neutral equilibrium.	
56	Determination of Meta centre.	
57	Examples	
58	Tutorial	

COURS PLAN FOR MAJOR COURSE (CBCS)
JAN 2023-JUN 2023
EVEN SEMESTER

Course- Honours/ Generic: Honours

Class / Semester : 2nd Semester

Name of the Paper : C3 (Introduction of Linguistics)

Units Assigned : Unit - 4

Marks Assigned : 16+

Class	Topic / Unit	Remarks
1.	Language Classification	
2.	Typological Classification	
3.	Genealogical Classification	
4.	Inorganic Language	
5.	Organic Language	
6.	Indo – European Language	
7.	Austronisian Language	
8.	Sino – Tibetan Language	
9.	Austro – Asiatic Language	
10.	Dravidian Language	
11.	Nigero – Congo Language	
12.	Afro – Asiatic Language	
13.	Japanic Language	
14.	Tai – Kadai Language	
15.	Altaic Language	

Course- Honours/ Generic: Honours

Class / Semester : 2nd Semester

Name of the Paper : C3 (Introduction to Linguistics)

Units Assigned : Unit – 5

Marks Assigned : 16

Class	Topic / Unit	Remarks
1.	What is Grammar	
2.	Traditional Grammar	
3.	Modern Grammar	
4.	Boidik Period	
5.	Western Period	
6.	Naturalists and Conventionalisits	
7.	Dionysius Thrax	
8.	Homeric and Attic	
9.	Donatus and Priscian	
10.	Speculative Grammarians	
11.	Scholastic Tradition	
12.	Transformational Generative Grammar	
13.	Fardinand De Saussure	
14.	Modern Linguistics	

Course- Honours/ Generic: Honours

Class / Semester : 4th Semester

Name of the Paper : C9 (Indo- Aryan Language and Assamese)

Units Assigned : Unit – 3+4

Marks Assigned : 20+24

Class	Topic / Unit	Remarks
1.	Sanskrit, Pali and Prakrit Bhasar Tulana	
2.	Sanskrit, Pali and Prakrit Vowels	
3.	Sanskrit, Pali and Prakrit Consonants	
4.	Sanskrit, Pali and Prakrit Sabdarup	
5.	Sanskrit, Pali and Prakrit Verbs	
6.	Asomiya Bhasar Janma Katha	
7.	Asomiya Bhasar Bikas	
8.	Pratna Asomiya Bhasa	
9.	Pracheen Asomiya Bhasa	
10.	Madhya Asomiya Bhasa	
11.	Adhunik Asomiya Bhasa	

Course- Honours/ Generic: Honours

Class / Semester : 4th Semester

Name of the Paper : Assamese prose Literature

Units Assigned : 3

Marks Assigned : 12

Class	Topic / Unit	Remarks
1.	Introduction of Bhattadeva	
2.	Text of Katha Geeta	
3.	Prose style of Katha Geeta	
4.	Bhattadeva's Prose style	
5.	Indtroduction of Lakshminath Bezbaruah	
6.	Text of Mor Jiban Sonwarn	
7.	Prose Style Mor Jiban Sonwarn	
8.	Lakshminath Bezbaruah Prose Style	

Course- Honours/ Generic: Honours

Class / Semester : 4th Semester

Name of the Paper : Assamese Language and script

Units Assigned : 3

Marks Assigned : 16

Class	Topic / Unit	Remarks
1.	Introduction of Bodo Lanaguage	
2.	Language Characteristics o f Bodo Language	
3.	Introduction of Karbi Language	
4.	Language Characteristics of Karbi Language	
5.	Introduction of Tai Khamti Language	
6.	Language Characteristics of Tai Khamti	
7.	Introduction of Tai Phake Language	
8.	Language Characteristics of Tai Phake	
9.	Introduction of Tai Turung	
10.	Language Characteristics of Tai Turung	

Course- Honours/ Generic: Honours

Class / Semester : 4th Semester

Name of the Paper : Assamese language

Units Assigned : 2

Marks Assigned : 16

Class	Topic / Unit	Remarks
1.	Assamese Language	
2.	Characteristics of Assamese Language	
3.	Dialect of Assamese Language	
4.	Types of Assamese Dialect	
5.	Kamrupi Dialect, Gowalpariya Dialect	
6.	Character istics of Kamrupi Dialect	
7.	Characteristics of Gowalporiya Dialect	
8.	Sub Dialect of Kamrupi Dialect	
9.	Characteristics of Kamrupi Sub Dialect	
10.	Sub Dialect of Gowalporiya Dialect	
11.	Characteristics of Gowalporiya Sub Dialect	

Course- Honours/ Generic: Honours

Class / Semester : 6th Semester

Name of the Paper : Language and Script of Assam (C 14)

Units Assigned : Unit – 5

Marks Assigned : 16

Class	Topic / Unit	Remarks
1.	Introduction script	
2.	Types of Script	
3.	Brahmi Script	
4.	Kusan Script	
5.	Gutpa Script	
6.	History of Assam Script	
7.	Development of Assamese Script	
8.	Roman Script	
9.	Devanagaree Script	
10.	Assamese Paleography	
11.	Type of Assamese Script	
12.	Tai Script	
13.	Other Language Script	

Course- Honours/ Generic: Honours

Class / Semester : 6th Semester

Name of the Paper : Language and Script of Assam (C14)

Units Assigned : Unit – 2

Marks Assigned : 16

Class	Topic / Unit	Remarks
1.	Assamese Language	
2.	Characteristics of Assamese Language	
3.	Dialect	
4.	Assamese Dialect	
5.	Type of Assamese Dialect	
6.	Kamrupi Dialect	
7.	Sub Dialect of Kamrupi	
8.	Gowalpariya Dialect	
9.	South Western Kamrupi Dialect	
10.	North Western Kamrupi Dialect	
11.	Eastern South Kamrupi Dialect	
12.	North South Kamrupi Dialect	
13.	Sub-Dialect of Gowalporiya Dialect	
14.	Characteristics of Gowalporiya Dialect	

Course- Honours/ Generic: Honours

Class / Semester : 6th Semester

Name of the Paper : World Literature

Units Assigned : Unit – 2

Marks Assigned : 15

Class	Topic / Unit	Remarks
1.	Kalidash	
2.	Kalidas Drama	
3.	Abhijyanam Sukantalm Introduction	
4.	Character of Abhijynam Sukuntalm	
5.	About the friends of Sukuntala	
6.	Durbasa Rishir Abhisap	
7.	Sukuntala Releate to Nature	

Course- Honours/ Generic: Honours

Class / Semester : 6th Semester

Name of the Paper : Introduction to World Literature

Units Assigned : Unit – 5

Marks Assigned : 20

Class	Topic / Unit	Remarks
1.	Asurateerath	
2.	King Lear	
3.	Character of King Lear	
4.	King Lear and Asurateeratha	
5.	Characteristics of Tragedy	
6.	Afkes Ten	
7.	Character of Afkes Ten	
8.	Novel of Child	
9.	Proverty of Afkes Ten	

Course- Honours/ Generic: Honours

Class / Semester : 6th Semester

Name of the Paper : Various aspects of Language and Literature

Units Assigned : 4

Marks Assigned : 16

Class	Topic / Unit	Remarks
1.	Literature of Sociology	
2.	Relation between sociology and literature	
3.	Theory of Literature Sociology	
4.	Importance of Literature Sociology	

DIGBOI COLLEGE , DIGBOI

COURSE PLAN(Jan 2023-Jun 2023)

Name of the Teacher – DR . Mrinal Kumar Gogoi (ASSAMESE Dept.)

Course - Honours /GENERIC –HONOURS .

Class/Semester - B A 2nd Semester (CBCS) .

Name of the paper – C-4 (Poetics) .

Units Assigned – Unit – 3 , 4 & 5 .

Marks Assigned - 16+16 +16 .

Class .	Topic/ Unit .	Remarks	
1	What is Poetics		
2	Relation between Alamkara and Chanda		
3	What is Alamkara and its definition		
4	Different types of Alamkara		
5	Different types of Sabdalamkara and Athalamkara -1		
6	Different types of Sabdalamkara and Athalamkara -2		
7	Sabdalamkara : Anupras, Jamak		
8	Sabdalamkara : Punaruktabadabhas		
9	Athalamkara : Upama, Rupak -1		
10	Athalamkara : Upama, Rupak -2		
11	Utpekhya, Apohnuti		
12	Sandes, Otiyokti		
13	Samasokti, Byatirek etc		
14	What is Rhyme and Metre		
15	Elements of Rhyme		
16	Porba		
17	Charan		
18	Stobak		
19	Mora		
20	Assamese Rhyme and its Characters		
21	Different types of Assamese Rhyme		
22	Unit of Assamese Chanda-Riti		
23	Swarabritta, Matrabritta & Jaogik Riti		
24	Old Assamese Rhyme		
25	Muktak Chanda and its Characters-1		
26	Muktak Chanda and its Characters-2		
27	Amitakhyor Chanda-1		
28	Amitakhyor Chanda-2		
29	Revision		
30	Class test		

Class /Semester - B A 4th Semester (CBCS) .
Name of the paper – C-10 (Selection from Assamese Prose) .
Units Assigned – Unit – 1 & 5 .
Marks Assigned - 16+18 .

Class .	Topic/ Unit .	Remarks	
1	Origin and development of Assamese Prose-1		
2	Origin and development of Assamese Prose-2		
3	Ankia Naat and Prose of Sankardeva		
4	Sanskrit Prose and Assamese literature		
5	Prose of Bhattadeva-1		
6	Prose of Bhattadeva-2		
7	Bhattadeva's Kathagita & Kathabhagavat		
8	Charitra kirtan at Assam		
9	The prose of Charit-puthi		
10	The other prose of Vaisnava period		
11	Prose-history of Ahom Kingdom		
12	Buranji Sahitya-1		
13	Buranji Sahitya-2		
14	Practical literature Prose of medieval periods -1		
15	Practical literature Prose of medieval periods -2		
16	Prose of Arunodoi periods -1		
17	Prose of Arunodoi periods -2		
18	Modern Assamese Prose		
19	Jonaki Yug & Assamese Prose		
20	Recent Assamese prose and its evaluation -1		
21	Recent Assamese prose and its evaluation -2		
22	Prose of Assamese Novel		
23	Prose of Assamese Short story		
24	Other prose of Post-war period		
25	Prose of BK Baruah & his article " Asomiya bhasar jnyati-kutum"-1		
26	Prose of BK Baruah & his article " Asomiya bhasar jnyati-kutum"-2		
27	Prose of Lila Gogoi		
28	"Buranji Bichari" by Lila Gogoi		
29	Hiren Gohain's prose and Assamese modern Literature		
30	Characteristics of Hiren Gohain's prose		
32	"Adhunik aru Adhunikatabad" by Hiren Gohain		
33	Prose of Nagen Saikia		
34	Contemporary Assamese Prose Writers		
35	"Asomiya Nri-Gosthi aru Bhasa-Gosthi samuh" by N Saikia-1		
36	"Asomiya Nri-Gosthi aru Bhasa-Gosthi samuh" by N Saikia-2		
37	Revision		

Class /Semester - B A 6th Semester (CBCS) .
Name of the paper – DSE-4(a) (Special Author) .
Units Assigned – Full Paper
Marks Assigned - 80

Class .	Topic/ Unit .	Remarks	
1	Introduction of modern Assamese literature		
2	Dr. B K Bhattacharya: Parichoy		
3	B.K. Bhatta as a writer		
4	B K Bhatta as a novelist		
5	B K Bhatta as a short story writer		
6	B K Bhatta as a poet		
7	B K Bhatta as a editor		
8	Ramdhenu and B K Bhatta		
9	Ramdhenu and modern Assamese literature		
10	Ramdhenu period and Assamese prose		
11	Mrityunjoy an Introduction		
12	Social value of Mrintyunjoy		
13	Characteristics of Mrintyunjoy		
14	Iyaruingon An Introduction		
15	Characteristics of Iyaruingom		
16	Rajpothe ringiyai An Introduction		
17	Other novels of B K Bhatta		
18	Chinaki xuuti: as a short story		
19	Various elements of Ass. Culture in his work		
20	Assamese culture and B K Bhatta		
21	Sative in his various work		
22	B K Bhatta as a translator		
23	B K Bhatta as a social worker		
24	Personality of B K Bhatta		
25	Class test		
26	Class test		
27	Short question about B K Bhatta		

Class /Semester - B A 6th Semester (CBCS) .
Name of the paper – 13 (Iyaruingom) .
Units Assigned – 2
Marks Assigned - 20

Class .	Topic/ Unit .	Remarks	
1	Introduction about B K Bhatta		
2	His literary works		
3	Novel: definition and classification		
4	Plot construction of the novel		
5	Characters of the novel		
6	Rreflexction of contemporary assamese society in this novel		
7	Critical analysis of the novel		
8	REVISION		
9	REVISION		
10	REVISION		

DIGBOI COLLEGE, DIGBOI

Course Plan(June 2022 to December 2022)

Name of the Teacher: Mukul Buragohain

Course-Honours/ Generic- Honours

Class/Semester-SEM-III

Name of the Paper- C6 (Group Theory -I)

Units Assigned- Unit-1,2,3,4 & 5

Marks Assigned-80

Class	Topic/Unit	Remarks
1	**Unit-1** :Introduction to Group theory	
2	Basic definitions and operations on sets	
3	Symmetries of a square	
4	Symmetries of a square	
5	Examples	
6	Tutorial	
7	Dihedral groups	
8	Examples of Dihedral groups of various order	
9	Definition and examples of permutation groups	
10	Theorem on permutation groups	
11	Theorems on permutation groups	
12	Tutorial	
13	Definition and examples of groups	
14	Elementary properties of groups.	
15	Elementary properties of groups.	
16	Basic Theorems on groups	
17	Basic Theorems on groups	
18	Solved Examples of groups	
19	Solved Examples of groups	
20	Tutorial	
21	**Unit-2** : Subgroups and examples of subgroups	
22	Basic properties of subgroups	
23	Theorems on subgroups	
24	Theorems on subgroups	
25	Theorems on subgroups	
26	Tutorial	
27	centralizer	
28	normalizer	
29	Theorems on centralizer and normalizer	
30	Center of a group	

31	Theorems on center of a group	
32	Tutorial	
33	product of two subgroups	
34	Theorems on product of two subgroups	
35	Theorems on product of two subgroups	
36	**Unit-3** Definition and examples of cyclic groups	
37	Tutorial	
38	Properties of cyclic groups	
39	classification of subgroups of cyclic groups	
40	Theorems on Cyclic groups	
41	Theorems on Cyclic groups	
42	Permutations and Cycle notation for permutations	
43	Tutorial	
44	even and odd permutations	
45	Computation of even and odd permutations	
46	alternating group	
47	Cosets	
48	properties of cosets	
49	Tutorial	
50	Theorems on cosets	
51	Theorems on cosets	
52	Lagrange's theorem	
53	Simple application of Lagrange's theorem	
54	Fermat's Little theorem	
55	Tutorial	
56	**Unit-4** External direct product	
57	Properties of External direct product	
58	Properties of External direct product	
59	Theorems on External direct product	
60	Theorems on External direct product	
61	Tutorial	
62	normal subgroups	
63	Theorems on normal subgroups	
64	Theorems on normal subgroups	
65	factor groups	
66	Theorem on factor groups	
67	Tutorial	
68	Cauchy's theorem for finite abelian groups	
69	Application of Cauchy's theorem for finite abelian groups	
70	Tutorial	
71	**Unit-4** Group homomorphisms	
72	Examples of group homomorphism	
73	properties of homomorphisms	
74	properties of homomorphisms	

75	Cayley's theorem	
76	Tutorial	
77	Isomorphisms and its Examples	
78	properties of isomorphisms	
79	properties of isomorphisms	
80	First isomorphism theorems	
81	second isomorphism theorems	
82	Tutorial	
83	Third isomorphism theorems	
84	Application of !st, 2^{nd} & 3^{rd} isomorphism theorems	
85	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan(June 2022 to December 2022)

Name of the Teacher: Mukul Buragohain

Course-Honours

Class/Semester- V

Name of the Paper- Group Theory -II

Units Assigned- Unit :1,2,3

Marks Assigned-80

Class	Topic/Unit	Remarks
1	**Unit-1**Automorphism	
2	Solved examples	
3	Solved examples	
4	Solved examples	
5	tutorial	
6	inner automorphism	
7	Theorems on inner automorphism	
8	Theorems on inner automorphism	
9	Theorems on inner automorphism	
10	tutorial	
11	automorphism groups	
12	automorphism groups of finite cyclic groups	
13	automorphism groups of finite cyclic groups	
14	automorphism groups of infinite cyclic groups	
15	automorphism groups of infinite cyclic groups	
16	tutorial	
17	applications of factor groups to automorphism groups	
18	applications of factor groups to automorphism	

	groups	
19	applications of factor groups to automorphism groups	
20	Characteristic subgroups	
21	tutorial	
22	Solved examples on Characteristic subgroups	
23	Solved examples on Characteristic subgroups	
24	Commutator subgroup	
25	Commutator subgroup	
26	tutorial	
27	Properties of Commutator subgroup	
28	Properties of Commutator subgroup	
29	Properties of Commutator subgroup	
30	tutorial	
31	external direct products	
32	properties of external direct products	
33	properties of external direct products	
34	properties of external direct products	
35	Problems on external direct products	
36	Tutorial	
37	the group of units modulo n as an external direct product	
38	the group of units modulo n as an external direct product	
39	the group of units modulo n as an external direct product	
40	Tutorial	
41	internal direct products	
42	internal direct products	
43	internal direct products	
44	Problems on internal direct products	
45	Problems on internal direct products	
46	Tutorial	
47	Fundamental Theorem of finite abelian groups	
48	Fundamental Theorem of finite abelian groups	
49	Application of Fundamental Theorem of finite abelian groups	
50	Tutorial	
51	**Unit**: 3 Conjugation	
52	Conjugate class	
53	Groups acting on themselves by conjugation	
54	Groups acting on themselves by conjugation	
55	Groups acting on themselves by conjugation	
56	Tutorial	
57	class equation	
58	class equation and consequences	

59	class equation and consequences	
60	conjugacy in Sn	
61	conjugacy in Sn	
62	Tutorial	
63	p-groups	
64	Properties of p-groups	
65	Properties of p-groups	
66	Sylow's 1^{st} theorem	
67	Sylow's 1^{st} theorem	
68	Tutorial	
69	Sylow's 2^{nd} theorem	
70	Sylow's 2^{nd} theorem	
71	Sylow's 3^{rd} theorem	
72	Sylow's 3^{rd} theorem	
73	Sylow's theorems and consequences	
74	Tutorial	
75	Cauchy's theorem	
76	Cauchy's theorem	
77	Simplicity of Anfor $n \geq 5$	
78	non-simplicity tests	
79	Problems on non-simplicity tests	
80	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan (January 2023 to June 2023)

Name of the Teacher: Mukul Buragohain

Course-Honours/ Generic- Honours

Class/Semester- Sem-IV

Name of the Paper- C10 (Ring Theory & Linear Algebra-I)

Units Assigned- Unit-1 &2

Marks Assigned-35

Class	Topic/Unit	Remarks
1	**Unit-1:** Definition and examples of rings	
2	Solved Examples	
3	properties of rings	
4	subrings	
5	Subrings related theorem	
6	Tutorial	
7	integral domain and theorems	
8	Fields and related theorems	
9	characteristic of a ring	
10	Ideal	
11	Ideal and its properties.	
12	Tutorial	
13	ideal generated by a subset of a ring	
14	operations on ideals	
15	factor rings	
16	Theorems on factor rings	
17	prime and maximal ideals	
18	Theorems on prime ideals	
19	Theorems on maximal ideals	
20	Tutorial	
21	**Unit-2:** Ring homomorphisms	
22	Examples of Ring homomorphisms	
23	Examples of Ring homomorphisms	
24	properties of ring homomorphisms	
25	properties of ring homomorphisms	
26	Tutorial	
27	Solved problems on ring homomorphism	
28	Solved problems on ring homomorphism	
29	Solved problems on ring homomorphism	
30	Isomorphism theorems I	
31	Isomorphism theorems I	
32	Tutorial	
33	Isomorphism theorems II	
34	Isomorphism theorems III	
35	Isomorphism theorems III	
36	Solved Examples	
37	field of quotients	
38	Theorems on field of quotients	
39	Theorems on field of quotients	
40	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan(January 2023 to June 2023)

Name of the Teacher: Mukul Buragohain

Course-Honours/ Generic- Generic

Class/Semester- Sem-IV

Name of the Paper- Algebra(GE4)

Units Assigned- Unit-1 &3

Marks Assigned- 52

Class	Topic/Unit	Remarks
1	**Unit-1:** Definition and examples of groups	
2	Basic Properties of groups	
3	Basic Properties of groups	
4	Order of an element and order of a group	
5	examples of abelian and non-abelian groups	
6	Tutorial	
7	examples of abelian and non-abelian groups	
8	Theorems on abelian and non-abelian groups	
9	The group Zn of integers under addition modulo n	
10	Solved Examples related with addition modulo n	
11	Solved Examples related with addition modulo n	
12	Tutorial	
13	the group U(n) of units under multiplication modulo n	
14	Solved Examples related with multiplication modulo n	
15	Cyclic groups from number systems	
16	Cyclic groups from number systems	
17	complex roots of unity	
18	Tutorial	
19	circle group	
20	the general linear group GLn(n,R)	
21	groups of symmetries of an isosceles triangle,	
22	groups of symmetries of an equilateral triangle,	
23	groups of symmetries of a rectangle	
24	groups of symmetries of a square	
25	the permutation group Sym (n)	
26	Turorial	
27	Solved examples	
28	Solved examples	
29	Group of quaternions	
30	Tutorial	
31	**Unit-3:**Definition of rings	
32	Examples of rings	
33	Solved problems on rings	

34	Properties of rings.	
35	Properties of rings.	
36	Tutorial	
37	examples of commutative and non-commutative rings	
38	examples of commutative and non-commutative rings	
39	rings from number systems	
40	rings from number systems	
41	rings from number systems	
42	Tutorial	
43	Zn the ring of integers modulo n	
44	Zn the ring of integers modulo n	
45	ring of real quaternion	
46	ring of real quaternions	
47	rings of matrices	
48	rings of matrices	
49	Tutorial	
50	polynomial rings	
51	polynomial rings	
52	rings of continuous functions	
53	Subrings and ideals	
54	Subrings and ideals	
55	Tutorial	
56	Integral domains	
57	fields,	
58	examples of fields: Zp, Q, R, and C.	
59	Field of rationalfunctions	
60	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan (January 2023 to June 2023)

Name of the Teacher: Mukul Buragohain

Course-Honours/ Generic- Honours

Class/Semester-B.Com 4th Sem

Name of the Paper- Business Mathematics

Units Assigned- Unit-II & IV

Marks Assigned- Marks not Assigned in the syllabus

Class	Topic/Unit	Remarks
1	**Unit-2** Mathematical functions and their types	
2	linear, quadratic, polynomial ,Exponential functions	
3	Logarithmic function	
4	Problems on Logarithmic function	
5	concept of limits	
6	Tutorial	
7	Problems of limits on algebraic fraction and polynomial functions	
8	Problems of limits on trigonometric functions	
9	Problems of limits on exponential and logarithmic functions	
10	Miscellaneous example including $x \to \infty$	
11	Miscellaneous example including $x \to \infty$	
12	Tutorial	
13	concept of continuity	
14	Examples on continuity	
15	Maxima and minima of involving second and higher order derivatives	
16	Maxima and minima of involving second and higher order derivatives	
17	concept of marginal analysis , concept of elasticity	
18	Tutorial	
19	applied maximum and minimum problems including effect of tax on monopolist optimum price and quantity, economic order quantity	
20	maximum and minimum problems including effect of tax on monopolist optimum price and quantity, economic order quantity	
21	**Unit-4** Rate of interest- nominal,effective –and their inter-relationship in different compounding solution	
22	Rate of interest- nominal,effective –and their inter-relationship in different compounding solution	
23	compounding and discounting of a sum using different types of rate	
24	Tutorial	
25	compounding and discounting of a sum using different types of rate	
26	Types of annuities like ordinary, due, deferred ,continuous, perpetual and their futures and present values using different types of rate of interest	
27	Types of annuities like ordinary, due, deferred ,continuous, perpetual and their futures and present values using different types of rate of	

	interest	
28	depreciation of assets	
29	depreciation of assets .	
30	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan(January 2023 to June 2023)

Name of the Teacher: Mukul Buragohain

Course-Honours

Class/Semester- VI

Name of the Paper- Ring theory and Linear Algebra-II

Units Assigned- Unit :1,2,3

Marks Assigned-80

Class	Topic/Unit	Remarks
1	**Unit-1** Polynomial rings	
2	Polynomial rings over commutative rings	
3	division algorithm and consequences	
4	principal ideal domains	
5	principal ideal domains	
6	Tutorial	
7	factorization of polynomials	
8	factorization of polynomials	
9	reducibility tests	
10	reducibility tests	
11	Solved problems on reducibility tests	
12	Tutorial	
13	irreducibility tests	
14	irreducibility tests,	
15	Problems on irreducibility tests	
16	Problems on irreducibility tests	
17	Problems on irreducibility tests	
18	Tutorial	
19	Eisenstein criterion	
20	unique factorization in Z[x].	
21	unique factorization in Z[x].	
22	Divisibility in integral domains	
23	Divisibility in integral domains	
24	Tutorial	
25	irreducibles	
26	primes	

27	unique factorization domains	
28	unique factorization domains	
29	Euclidean domains	
30	Tutorial	
31	**Unit-2:**Dual spaces	
32	dual basis	
33	Examples of dual basis and dual space	
34	double dual	
35	Problems on double dual	
36	Tutorial	
37	transpose of a linear transformation	
38	transpose of a linear transformation and its matrix in the dual basis,	
39	Tutorial	
40	Problems on transpose of a linear transformation and its matrix in the dual basis	
41	annihilators	
42	Tutorial	
43	Problems on annihilators	
44	Eigen spaces of a linear operator	
45	diagonalizability	
46	Problems on diagonalizability	
47	Tutorial	
48	invariant subspaces	
49	Cayley-Hamilton theorem	
50	Application of Cayley-Hamilton theorem	
51	the minimal polynomial for a linear operator	
52	Problems on the minimal polynomial for a linear operator	
53	Problems on the minimal polynomial for a linear operator	
54	Problems on the minimal polynomial for a linear operator	
55	Tutorial	
56	**Unit-3** Inner product spaces,	
57	Inner product spaces and norms,	
58	Theorems on Inner product spaces and norms	
59	Theorems on Inner product spaces and norms	
60	Tutorial	
61	Gram-Schmidt orthogonalisation process	
62	Gram-Schmidt orthogonalisation process	
63	Application of Gram-Schmidt orthogonalisation process	
64	Application of Gram-Schmidt orthogonalisation process	
65	Tutorial	
66	orthogonal complements	
67	Bessel’s	

	inequality	
68	the adjoint of a linear operator	
69	Least Squares Approximation	
70	Least Squares Approximation	
71	Tutorial	
72	minimal solutions to systems of linear equations	
73	Problems on minimal solutions to systems of linear equations	
74	Normal and self-adjoint operators	
75	Normal and self-adjoint operators	
76	Orthogonal projections	
77	Tutorial	
78	Spectral theorem	
79	Spectral theorem	
80	Tutorial	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Nabadweep Chamuah

Course –Honours

Class/Semester- 2nd

Name of the Paper- C-4-**APPLIED PHYSICS**

Units Assigned- 1,2

Marks Assigned- 30

Class	Topic/ Unit	Remarks
1	Inadequacies of Classical physics, Compton's effect	
2	Photo-electric Effect	
3	Wave-particle duality, de Broglie waves	
4	Wave-particle duality, de Broglie waves	
5	Basic postulates and formalism of quantum mechanics	
6	probabilistic interpretation of waves	
7	conditions for physical acceptability of wave functions.	
8	Schrodinger wave equation for a free particle and in a force field (1 dimension)	
9	Boundary and continuity conditions, Operators in Quantum Mechanics.	
10	Conservation of probability, Time-dependent form	
11	Conservation of probability, Time-dependent form	
12	Linearity and superposition of Operators, Time-independent one-dimensional Schrodinger wave equation	
13	Stationary states, Eigen-values and Eigen functions	
14	Particle in a one-dimensional box, Extension to a three-dimensional box	
15	Potential barrier problems, phenomenon of tunneling	
16	Kronig Penney Model and development of band structure	
17	Kronig Penney Model and development of band structure	
18	Spherically symmetric potentials	
19	Hydrogen-like atom problem	
20	Revision	
21	Elastic and Plastic Deformations	
22	Hooke's Law	
23	Elastic Moduli	
24	Brittle and Ductile Materials	
25	Tensile Strength, Theoretical and Critical Shear Stress of Crystals	
26	Tensile Strength, Theoretical and Critical Shear Stress of Crystals	
27	Strengthening Mechanisms	
28	Strengthening Mechanisms, Hardness, Creep, Fatigue, Fracture	
29	Hardness, Creep, Fatigue, Fracture.	
30	Revision	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Nabadweep Chamuah

Course –Honours

Class/Semester- 4th

Name of the Paper- C-9-**SIGNALS AND SYSTEMS**

Units Assigned- ALL

Marks Assigned- 60

Class	Topic/ Unit	Remarks
1	Continuous and discrete time signals	
2	Continuous and discrete time signals	
3	Continuous and discrete time signals	
4	Transformation of the independent variable	
5	Transformation of the independent variable	
6	Transformation of the independent variable	
7	Exponential signals	
8	sinusoidal signals	
9	Impulse functions	
10	unit step functions	
11	Continuous-Time and Discrete-Time Systems	
12	Continuous-Time and Discrete-Time Systems	
13	Continuous-Time and Discrete-Time Systems	
14	Basic System Properties	
15	Basic System Properties	
16	Basic System Properties	
17	Basic System Properties	
18	Revision	
19	Discrete time LTI systems	
20	Discrete time LTI systems	
21	Convolution Sum	
22	Continuous time LTI systems	
23	Continuous time LTI systems	
24	Convolution integral	
25	Properties of LTI systems	
26	LTI systems with and without memory	
27	Causality, Stability, Unit Step response	
28	Differential and Difference equation formulation	
29	Block diagram representation of first order systems	
30	Revision	
31	Continuous-Time periodic signals	
32	Convergence of the Fourier series	

33	Properties of continuous-Time Fourier series	
34	Properties of continuous-Time Fourier series	
35	Discrete-Time periodic signals	
36	Properties of Discrete-Time Fourier series	
37	Properties of Discrete-Time Fourier series	
38	Frequency-Selective filters	
39	Simple RC highpass and lowpass filters	
40	Simple RC highpass and lowpass filters	
41	Aperiodic signals, Periodic signals,	
42	Properties of Continuous-time Fourier transform	
43	Convolution and Multiplication Properties	
44	Convolution and Multiplication Properties	
45	Properties of Fourier transform	
46	Properties of Fourier transform	
47	Fourier transform Pairs	
48	Revision	
49	Laplace Transform	
50	Laplace Transform	
51	Inverse Laplace Transform	
52	Properties of the Laplace Transform,	
53	Properties of the Laplace Transform,	
54	Laplace Transform Pairs	
55	Laplace Transform for signals,	
56	Laplace Transform Methods in Circuit Analysis	
57	Impulse and Step response of RL circuit	
58	Impulse and Step response of RC circuit	
59	Impulse and Step response of RLC circuit	
60	Revision	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Nabadweep Chamuah

Course –Honours

Class/Semester- 6th

Name of the Paper- DSE-3 - NANOELECTRONICS

Units Assigned- All

Marks Assigned- 60

Class	Topic/ Unit	Remarks
	Unit – 1	
1	Definition of Nano-Science and Nano Technology, Applications of Nano-Technology	
2	Size dependence of properties, bonding in atoms and giant molecular solids	
3	Electronic conduction, Systems confined to one, two or three dimension and their effect on property	
4	Time dependent and time independent Schrodinger wave equations	
5	Time dependent and time independent Schrodinger wave equations	
6	Particle in a box, Potential step: Reflection and unnelling (Quantum leak).	
7	Penetration of Barrier, Electron trapped in 2D plane (Nano sheet)	
8	Quantum confinement effect in nano materials.	
9	Preparation of Quantum Nanostructure; Size and Dimensionality effect, Fermi gas; Potential wells	
10	Preparation of Quantum Nanostructure; Size and Dimensionality effect, Fermi gas; Potential wells	
11	Partial confinement; Excitons; Single electron Tunneling	
12	Partial confinement; Excitons; Single electron Tunneling	
13	Infrared detectors; Quantum dot laser Superconductivity	
14	Infrared detectors; Quantum dot laser Superconductivity	
	Unit – 2	
15	Synthetic aspects: bottom up and top down approaches	
16	Synthetic aspects: bottom up and top down approaches	
17	Lithograpahic and Nonlithograpahic techniques	
18	Lithograpahic and Nonlithograpahic techniques	
19	Sputtering and film deposition in glow discharge	
20	Sputtering and film deposition in glow discharge	
21	DC sputtering technique (p-CuAlO2 deposition)	
22	Thermal evaporation technique	
23	E-beam evaporation, Chemical Vapour deposition(CVD)	
24	Synthesis of carbon nano-fibres and multi-walled carbon nanotubes	
25	Synthesis of carbon nano-fibres and multi-walled carbon nanotubes	
26	Pulsed Laser Deposition,	

27	Molecular beam Epitaxy, Sol-Gel Technique (No chemistry required),	
28	Synthesis of nanowires/rods	
29	Electro deposition	
30	Chemical bath deposition, Ion beam deposition system,	
31	Vapor-Liquid –Solid (VLS) method of nanowire	
32	Vapor-Liquid –Solid (VLS) method of nanowire	
	Unit – 3	
33	Scanning Probe Microscopy (SPM),	
34	Atomic Force Microscopy (AFM),	
35	Field Ion Microscopy	
36	Scanning Electron Microscopy (SEM),	
37	Transmission Electron Microscopy (TEM) including energy dispersive X-ray (EDX) analysis	
38	low energy electron diffraction (LEED),	
39	reflection high energy electron diffraction (RHEED)	
40	Infra-red and Raman Spectroscopy	
41	Infra-red and Raman Spectroscopy	
42	X-ray Spectroscopy	
43	X-ray Spectroscopy	
44	Magnetic resonance	
45	Optical and Vibrational Spectroscopy	
46	Optical and Vibrational Spectroscopy	
47	Optical and Vibrational Spectroscopy	
48	Characterization and application like biopolymer tagging and light emitting semiconductor quantum dots	
49	Characterization and application like biopolymer tagging and light emitting semiconductor quantum dots	
50	Revision	
	Unit – 4	
51	Carbon nanotubes, nano cuboids	
52	nano cuboids, graphene	
53	Carbon quantum dots: Fabrication, structure. electrical, mechanical, and vibrational properties and applications	
54	Carbon quantum dots: Fabrication, structure. electrical, mechanical, and vibrational properties and applications	
55	Use of nano particles for biological application,	
56	Drug delivery and bio-imaging	
57	Drug delivery and bio-imaging	
58	Impact of nanotechnology on the environment.	
59	Impact of nanotechnology on the environment.	
60	Revision	

DIGBOI COLLEGE: DIGBOI

Course Plan Even Semester (2023 January – June)

Name of the teacher- Narendra Kumar Das
Course- Honours/Generic- Generic
Class/Semester- 2nd Semester (CBCS)
Name of the paper- Regional Development (GE-02)
Units Assigned- 3,4,5
Marks Assigned- 40

CLASS	UNITS/TOPIC	REMARKS
1	Concept of Region	
2	Choice of a region for planning	
3	Concept and Characteristics of Ideal Planning Region	
4	Concept and Characteristics of Ideal Planning Region	
5	Delineation of Planning Region	
6	Delineation of Planning Region	
7	Concept of Regionalization	
8	Regionalization of India for Planning	
9	Agro-Ecological Zones	
10	Agro-Ecological Zones	
11	Concept of Strategies and Models in Regional Planning	
12	Growth Pole Model of Perroux	
13	Growth Pole Model of Perroux	
14	Growth Center Model in Indian Context	
15	Growth Center Model in Indian Context	
16	Village Cluster Model in Indian Context	
17	Concept of Problem Regions in Regional Planning	
18	Tribal Area Development Programme	
19	Hill Area Development Programme	
20	DVC The Success story and Failure	
21	DVC The Success story and Failure	

DIGBOI COLLEGE: DIGBOI

Course Plan Even Semester (2023 January-June)

Name of the teacher- Narendra Kumar Das
Course- Honours/Generic- Generic
Class/Semester- 4th Semester (CBCS)
Name of the paper- Climate Change: Vulnerability & Adaptation (GE-3)
Units Assigned- 3, 4, 5
Marks Assigned- 40

CLASS	UNIT/TOPIC	REMARKS
1	Concept of Mega Industrial Complexes	
2	National Capital Industrial Region	
3	Mumbai- Pune Industrial Region	
4	Major Problems Mumbai-Pune Industrial Region After Independence	
5	Bengaluru-Chennai Industrial Region	
6	Chotanagpur Industrial Region	
7	Factors Favourable for Industrialization in Chotanagpur Industrial Region	
8	Industries in Chotanagpur Region	
9	History of Industrialization in India	
10	Industrial Revolution in India	
11	Impact of Industrialization in India	
12	Environmental Impact of Industrialization in India	
13	Social Impact of Industrialization in India	
14	Economic Impact of Industrialization in India	
15	The Role of Industrialization in Economic Development of India	
16	Industrial Policy of India since Independence	
17	Objectives of Industrial Policy of India	
18	New Industrial Policy of India	
19	Outcomes of New Industrial Policy of India	
20	Limitations of Industrial Policy in India	
21	Future of Industrial Policies in India	

DIGBOI COLLEGE, DIGBOI

Course Plan Even Semester (2023 January-June)

Name of the Teacher-Dr. Sangeeta Boruah Saikia

Course –Honours / Generic – GE-2

Class/Semester-2nd Semester (CBCS)

Name of the Paper-Regional Development

Units Assigned- 1 and 2

Marks Assigned- 40

Class	Topic/ Unit	Remarks
1.	Definition of Region	
2.	Types of Region	
3.	Concept of Planning	
4.	Planning Regions: Definition and Characteristics	
5.	Types of Planning Region	
6.	Need of Regional Planning	
7.	Principles of Regional Planning	
8.	Objectives of Regional Planning	
9.	Planning Process and Planning Regions	
10.	Evolution of Regional Planning	
11.	Formal Region	
12.	Functional Regional	
13.	Nodal Region	
14.	Planning Region and Regional Development	
15.	Karl Marx's Theory of Economic Development	
16.	Concept of Regional Imbalanced	
17.	Theory of Balanced Development	
18.	Regional Development in India	
19.	Theory of unbalanced Development	
20.	Causes of Regional Imbalance in India	
21.	Regional Disparities in India	
22.	Regional Imbalances and Economic Industries	
23.	Regional Disparities and Human Development	
24.	Problem of Functional Regiona	
25.		

DIGBOI COLLEGE, DIGBOI

Course Plan Even Semester (2023 January-June)

Name of the Teacher-Dr. Sangeeta Boruah Saikia

Course –Honours / Generic – GE-4

Class/Semester-4th Semester (CBCS)

Name of the Paper-Industrial Geography

Units Assigned- 1 and 2

Marks Assigned- 40

Class	Topic/ Unit	Remarks
1.	Concept and Nature of Industrial Geography	
2.	Scope of Industrial Geography	
3.	Types and Classification of Industries	
4.	Geographical Characteristics of Industries	
5.	Locational factors of Industries	
6.	Weber's Theory of Industrial Location	
7.	Small Scale Industry	
8.	Medium Scale Industry	
9.	Heavy Industry	
10.	Manufacturing Industries	
11.	Iron and Steel Industry	
12.	Processes of Iron and Steel Production	
13.	Location of Iron and Steel Industry	
14.	Early Localization and Early Growth	
15.	Distribution of Iron and Steel Industry	
16.	Iron and Steel Industry in India	
17.	Rural Based Industries	
18.	Locational factors of Rural based Industries	
19.	Characteristics of Rural Based Industries	
20.	Footloose Industry	
21.	Characteristics of Footloose Industries	
22.	Locational Factors of Footloose Industries	
23.	Problem of Footloose Industries	
24.	Some Examples of Footloose Industry in India	
25.		

DIGBOI COLLEGE, DIGBOI
Course Plan, JAN-JUN, 2023

NEELAKSHI HAZARIKA

Name of the Teacher- NEELAKSHI HAZARIKA
Course — Honours
Class/Semester- 4th Semester
Name of the Paper- 401, Inorganic Chemistry
Units Assigned- All
Marks Assigned- 53

Class	Topic/ Unit	Remarks
1.	Unit I: Coordination Chemistry IUPAC nomenclature of coordination compounds	
2.	isomerism in coordination compounds.	
3.	Stereochemistry of complexes with 4 and 6 coordination numbers.	
4.	Chelate effect	
5.	Polynuclear complexes	
6.	Labile and inert complexes.	
7.	Werner's theory,	
8.	valance bond theory (inner orbital complexes), electroneutrality	
9.	VBT of outer orbital complexes	
10.	Electroneutrality principle and back bonding.	
11.	Crystal field theory	
12.	measurement of 10Dq (Δo),	
13.	CFSE in weak and fields,	
14.	CFSE in weak and strong fields,	
15.	pairing energies	
16.	factors affecting the magnitude of 10Dq (Δo, Δt).	
17.	Octahedral vs. tetrahedral coordination,	
18.	tetragonal distortions from octahedral geometry	
19.	Jahn-Teller theorem	
20.	square planar geometry	
21.	Qualitative aspect of Ligand field and MO Theory.	
22.	Unit II: Transition Elements General group trends with special reference to electronic configuration, colour,	
23.	Variable valency	
24.	General trends in magnetic and catalytic properties	
25.	ability to form complexes.	
26.	Stability of various oxidation states and e.m.f. (Latimer diagram)	
27.	Bsworth diagrams	
28.	Difference between the first, second and third transition series.	
29.	Chemistry of Ti, V, Cr,	
30.	Chemistry of	

31.	Chemistry of Mn, Fe	
32.	Chemistry Co in various oxidation states	
33.	Unit III: Lanthanoids and Actinoids Electronic configuration	
34.	oxidation states, colour	
35.	spectral and magnetic properties	
36.	Lanthanide contraction and consequences	
37.	separation of lanthanides by ion-exchange method only	
38.	Comparision between actinoids and lanthanoids	
39.	Unit IV: Bioinorganic Chemistry Metal ion present in biological systems,	
40.	classification of elements according to their action in biological system	
41.	Geo chemical effect on distribution of metals	
42.	Sodium/ K-pump, Biological role of Na- K	
43.	Carbonic anhydrase, it's structure and function	
44.	Carboxypeptidase, it's structure and function	
45.	Excess and deficiency of some trace metals.	
46.	Toxicity of Hg, reasons for toxicity, treatment and prevention	
47.	Toxicity of Pb, reasons for toxicity, treatment and prevention	
48.	Toxicity of As, reasons for toxicity, treatment and prevention	
49.	use of chelating agents in medicine.	
50.	Iron and its application in bio-systems	
51.	Haemoglobin, It's structure and application	
52.	storage of iron in biological system	
53.	transfer of iron in human body	

DIGBOI COLLEGE, DIGBOI
Course Plan, JAN-JUN, 2023

Name of the Teacher- NEELAKSHI HAZARIKA
Course – Honours
Class/Semester- 4th Semester
Name of the Paper- 401, Inorganic Chemistry
Units Assigned- All
Marks Assigned- 53

Class	Topic/ Unit	Remarks
1.	Unit I: Coordination Chemistry IUPAC nomenclature of coordination compounds	
2.	isomerism in coordination compounds.	
3.	Stereochemistry of complexes with 4 and 6 coordination numbers.	
4.	Chelate effect	
5.	Polynuclear complexes	
6.	Labile and inert complexes.	
7.	Werner's theory,	
8.	valance bond theory (inner orbital complexes), electroneutrality	
9.	VBT of outer orbital complexes	
10.	Electroneutrality principle and back bonding.	
11.	Crystal field theory	
12.	measurement of 10Dq (Δo),	
13.	CFSE in weak and fields,	
14.	CFSE in weak and strong fields,	
15.	pairing energies	
16.	factors affecting the magnitude of 10Dq (Δo, Δt).	
17.	Octahedral vs. tetrahedral coordination,	
18.	tetragonal distortions from octahedral geometry	
19.	Jahn-Teller theorem	
20.	square planar geometry	
21.	Qualitative aspect of Ligand field and MO Theory.	
22.	Unit II: Transition Elements General group trends with special reference to electronic configuration, colour,	
23.	Variable valency	
24.	General trends in magnetic and catalytic properties	
25.	ability to form complexes.	
26.	Stability of various oxidation states and e.m.f. (Latimer diagram)	
27.	Bsworth diagrams	
28.	Difference between the first, second and third transition series.	
29.	Chemistry of Ti, V, Cr,	
30.	Chemistry of	
31.	Chemistry of Mn, Fe	

32.	Chemistry Co in various oxidation states	
33.	Unit III: Lanthanoids and Actinoids Electronic configuration	
34.	oxidation states, colour	
35.	spectral and magnetic properties	
36.	Lanthanide contraction and consequences	
37.	separation of lanthanides by ion-exchange method only	
38.	Comparision between actinoids and lanthanoids	
39.	Unit IV: Bioinorganic Chemistry Metal ion present in biological systems,	
40.	classification of elements according to their action in biological system	
41.	Geo chemical effect on distribution of metals	
42.	Sodium/ K-pump, Biological role of Na- K	
43.	Carbonic anhydrase, it's structure and function	
44.	Carboxypeptidase, it's structure and function	
45.	Excess and deficiency of some trace metals.	
46.	Toxicity of Hg, reasons for toxicity, treatment and prevention	
47.	Toxicity of Pb, reasons for toxicity, treatment and prevention	
48.	Toxicity of As, reasons for toxicity, treatment and prevention	
49.	use of chelating agents in medicine.	
50.	Iron and its application in bio-systems	
51.	Haemoglobin, It's structure and application	
52.	storage of iron in biological system	
53.	transfer of iron in human body	

DIGBOI COLLEGE, DIGBOI
Course Plan, JAN-JUN, 2023
(w.e.f MAY,2021)

Name of the Teacher-NEELAKSHI HAZARIKA
Course– Generic
Class/Semester- 4th Semester, CBCS
Name of the Paper- CHEMISTRY-GE-401, Transition metals, Coordination Chemistry, States of Matter and Chemical Kinetics
Units Assigned-
Marks Assigned- 26

Class	Topic/ Unit	Remarks
1.	**Section A: Inorganic Chemistry** Unit I: Transition Series Elements (3d series) General group trends, electronic configuration,	
2.	variable valency, colour of transition elements	
3.	magnetic and catalytic properties of transition elements	
4.	ability to form complexes of transition elements	
5.	stability of various oxidation states, Latimer diagrams for Mn	
6.	Latimer diagrams for Fe.	
7.	Latimer diagrams for Cu	
8.	Lanthanoids and actinoids: Electronic configurations, oxidation states of lanthanoids	
9.	colour, magnetic properties of lanthanoids	
10.	lanthanide contraction, it's consequences	
11.	Separation of lanthanides (ion exchange method).	
12.	Electronic configurations, oxidation states of actinoids	
13.	colour, magnetic properties of actinoids	
14.	Unit II: Coordination Chemistry Introduction of coordination compound	
15.	Types of ligands,	
16.	Chelating ligand and chelate effect	
17.	Structural isomerism in complexes with Coordination numbers 4 and 6.	
18.	stereoisomerism in complexes with Coordination numbers 4 and 6.	
19.	Valence Bond Theory (VBT): Inner orbital complexes of Cr, Fe for coordination numbers 4 and 6)	
20.	Valence Bond Theory (VBT): Inner orbital complexes of Co, Ni and Cu (coordination numbers 4 and 6)	
21.	VBT for outer orbital complexes of Cr, Fe, (coordination numbers 4 and 6).	
22.	VBT for outer orbital complexes of Co, Ni and Cu (coordination numbers 4 and 6).	
23.	Drawbacks of VBT	
24.	IUPAC (2005) system of nomenclature of coordination compound	

25.	IUPAC (2005) system of nomenclature of coordination compound	
26.	Unit III: Crystal Field Theory Crystal Field Theory (CFT): An introduction	
27.	Crystal field effect in octahedral symmetry	
28.	Crystal field stabilization energy (CFSE)	
29.	Crystal field effects for weak and strong fields.	
30.	Crystal field effect in Tetrahedral symmetry.	
31.	Factors affecting the magnitude of D.	
32.	Spectrochemical series.	
33.	Comparison of CFSE for Oh and Td complexes	
34.	Tetragonal distortion of octahedral geometry.	
35.	Jahn-Teller distortion	
36.	Square planar coordination	

DIGBOI COLLEGE, DIGBOI
Course Plan
SESSION JAN- MAY, 2023

Name of the Teacher- NEELAKSHI HAZARIKA
Course – 6TH SEM HONOURS
Class/Semester- 6TH SEM Honours, CBCS
Name of the Paper- C- 13
Units Assigned- II.III, IV
Marks Assigned-53

Class	Topic/ Unit	Remarks
1.	Unit II: Organometallic compounds Definition and classification of organometallic compounds on the basis of bond type.	
2.	Conceptof hapticity of organic ligands.	
3.	Metal carbonyls: 18 electron rule, electron count of mononuclear, polynuclear and substituted metal carbonyls of 3d series.	
4.	General methods of preparation (direct combination, reductivecarbonylation, thermal and photochemical decomposition) of mono and binuclear carbonyls of 3d series.	
5.	Structures of mononuclear and binuclear carbonyls of Cr, Mn, Fe,Co and Ni usingVBT	
6.	π-acceptor behavior of CO(MO diagram of CO to be discussed), synergic effect and use of IR data to eplain extent of back bonding.	
7.	Zeise's salt: preparation and structure, evidences of synergic effect and comparison of synergic effect with that in carbonyls.	
8.	Metal Alkyls: Important structural features of methyl lithium (tetramer) and trialkyl aluminium(dimer), concept of multicentre bonding in these compounds.	
9.	Role of triethylaluminium in polymerization of ethane (Ziegler-Natta Catalyst).	
10.	Species present in ether solution of Grignard reagent and their structures,	
11.	Schlenk equilibrium.	
12.	Ferrocene: Preparation and reactions (acetylation, alkylation, metallation	
13.	Structure and aromaticity.	
14.	Comparison of aromaticity and reactivity with that of benzene.	
15.	Unit III: Reaction Kinetics and Mechanism Introduction to inorganic reaction mechanisms.	
16	Substitution reactions in square planar complexes	

17	Trans-effect, theories of trans-effect,	
18	mechanism of nucleophilic substitution in square planar complexes	
19	Thermodynamic and kinetic stability, kinetics of octahedral substitution	
20	ligand field effects and reaction rates	
21	Mechanism of substitution in octahedral complexes.	
22	Unit IV: Catalysis by Organometallic Compounds Study of the following industrial processes and their mechanism 1. Alkene hydrogenation (Wilkinson's Catalyst)	
23	2. Hydroformylation (Co salts)	
24	3. Wacker Process	
25	4. Synthetic Gasoline (Fisher Tropsch reaction)	
26	5. Synthesis gas by metal carbonyl complexes	

SESSION JAN- MAY, 2023
Name of the Teacher- NEELAKSHI HAZARIKA
Course — Honours (CBCS)
Class/Semester-6th sem
Name of the Paper-DSE-603
Dissertation (Project work)
Marks Assigned- 100

Class	Topic/ Unit	Remarks
1.	Objective	
2.	Objective	
3.	Objective	
4.	Review of literature	
5.	Review of literature	
6.	Review of literature	
7.	Review of literature	
8.	Review of literature	
9	Dissertation writing	
10	Dissertation writing	
11	Dissertation writing	
12	Dissertation writing	
13	Dissertation writing	
14	Dissertation writing	

UNIT-1 UV-VIS spectroscopy (PC-14)	
1	Types of electronic transitions,chromophores and auxochromes
2	Shifts of bands,intensity of absorption
3	Woodward Fieser rule
4	Determination of maximum wavelength

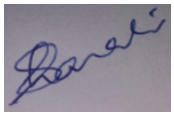
Digboi College: Department of English

Course Plan

(Jan-May 2023)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: **English Honours**
Class/Semester-: **SECOND**
Name of the Course/Paper: **C3: Indian writing in English**
Units Assigned: **III (Part) & IV**
Marks Assigned: **30** **Class per week: 02**

Class	Topic/ Unit	Remarks
1.	a. Introduction to Indian English writings b. Introduction to North-east Indian poetry in English	Objective is to familiarize the learners with the concerns of Indian English writers and inspire in them a critical insight.
2.	Mulk Raj Anand: The Two Lady Rams	Groundwork for the play
3.	Mulk Raj Anand: The Two Lady Rams	Analysis and appreciation
4.	Mulk Raj Anand: The Two Lady Rams	Analysis and appreciation
5.	Salman Rushdie: The Free Radio	Analysis and appreciation
6.	Salman Rushdie: The Free Radio	Analysis and appreciation
7.	Salman Rushdie: The Free Radio	Analysis and appreciation
8.	Shashi Despande: The Intrusion	Analysis and appreciation
9.	Shashi Despande: The Intrusion	Analysis and appreciation
10.	Shashi Despande: The Intrusion	Analysis and appreciation
11.	Arup kr Dutta: The Wilted Flower	Analysis and appreciation
12.	Arup kr Dutta: The Wilted Flower	Analysis and appreciation
13.	Arup kr Dutta: The Wilted Flower	Analysis and appreciation
14.	Nissim Ezekiel: Night of the Scorpion	Analysis and appreciation
15.	Nissim Ezekiel: Enterprise	Analysis and appreciation
16.	Nissim Ezekiel: as a poet	Analysis and appreciation
17.	Robin s. Ngangom: A Poem for Mother	Analysis and appreciation
18.	Robin s. Ngangom: The Strange affair of Robin s. Ngangom	Analysis and appreciation
19.	Robin s. Ngangom: The Strange affair of Robin s. Ngangom	Analysis and appreciation
20.	Robin s. Ngangom: The Strange affair of Robin s. Ngangom	Analysis and appreciation
21	Interactions	Problem solving
22	Interactions	Problem solving
23	Presentations	Problem solving
24	Presentations	Problem solving



Signature of faculty

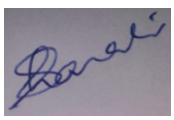
Digboi College: Department of English

Course Plan

(Jan-May 2023)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: **English Honours**
Class/Semester-: **Fourth**
Name of the Course/Paper: **C9: British Romantic Literature**
Units Assigned: **I: Pre-Romantic Literature**
Marks Assigned: **20** **Class per week: 02**

Class	Topic/ Unit	Remarks
1.	a. Introduction to Pre-Romantic Literature	Objective is to familiarize the learners with the characteristics of English Pre-Romantic literature and inspire in them a critical insight.
2.	William Blake: as a poet	Analysis and appreciation
3.	William Blake: Introduction to Songs of Innocence	Analysis and appreciation
4.	William Blake: The Lamb	Analysis and appreciation
5.	William Blake: The Lamb	Analysis and appreciation
6.	William Blake: The Tyger	Analysis and appreciation
7.	William Blake: The Tyger	Analysis and appreciation
8.	William Blake: The Lamb and The Tyger: Comparison	Analysis and appreciation
9.	William Blake: The Chimney Sweeper (Innocence)	Analysis and appreciation
10.	William Blake: The Chimney Sweeper (Innocence)	Analysis and appreciation
11.	William Blake: The Chimney Sweeper (Experience)	Analysis and appreciation
12.	William Blake: The Chimney Sweeper (Experience)	Analysis and appreciation
13.	William Blake: The Chimney Sweeper: Innocence and Experience (Comparative study)	Analysis and appreciation
14.	Robert Burns: A Bard's Epitaph	Analysis and appreciation
15.	Robert Burns: A Bard's Epitaph	Analysis and appreciation
16.	Robert Burns: Scots Wha Hae	Analysis and appreciation
17.	Robert Burns: Scots Wha Hae	Analysis and appreciation
18.	Interactions	Problem solving
19.	Presentations	Problem solving
20.	Presentations	Problem solving



Signature of faculty

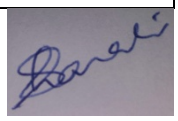
Digboi College: Department of English

Course Plan

(Jan-May 2023)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: **English Honours**
Class/Semester-: **Fourth**
Name of the Course/Paper: **C10: British Literature: 19th Century**
Units Assigned: **III: Charles Dickens: Hard Times**
Marks Assigned: **20** **Class per week: 02**

Class	Topic/ Unit	Remarks
1.	a. Introduction to Victorian Literature/Novel/Dickens	Objective is to familiarize the learners with the characteristics of English Victorian literature and inspire in them a critical insight.
2.	Hard Times: Part I: Sowing	Analysis and appreciation
3.	Hard Times: Part I: Sowing	Analysis and appreciation
4.	Hard Times: Part I: Sowing	Analysis and appreciation
5.	Hard Times: Part I: Sowing	Analysis and appreciation
6.	Hard Times: Part I: Sowing	Analysis and appreciation
7.	Hard Times: Part II: Reaping	Analysis and appreciation
8.	Hard Times: Part II: Reaping	Analysis and appreciation
9.	Hard Times: Part II: Reaping	Analysis and appreciation
10.	Hard Times: Part II: Reaping	Analysis and appreciation
11.	Hard Times: Part II: Reaping	Analysis and appreciation
12.	Hard Times: Part III: Garnering	Analysis and appreciation
13.	Hard Times: Part III: Garnering	Analysis and appreciation
14.	Hard Times: Part III: Garnering	Analysis and appreciation
15.	Hard Times: Part III: Garnering	Analysis and appreciation
16.	Hard Times: Part III: Garnering	Analysis and appreciation
17.	Hard Times: Plot and Characterization	Analysis and appreciation
18.	Hard Times: Depiction of Victorian society	Analysis and appreciation
19.	Presentations	Problem solving
20.	Presentations	Problem solving
21	Presentations	Problem solving
22	Presentations	Problem solving



Signature of faculty

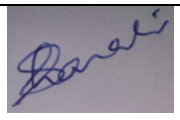
Digboi College: Department of English

Course Plan

(Jan-May 2023)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: **English Honours**
Class/Semester-: **Sixth**
Name of the Course/Paper: **C13: Modern European Drama**
Units Assigned: **IV: Avant-Garde Drama**
Marks Assigned: **20** **Class per week: 02**

Class	Topic/ Unit	Remarks
1.	a. Introduction to New drama & Avant-Garde Drama	Objective is to familiarize the learners with aspects of new drama & avant-garde drama and inspire in them a critical insight.
2.	Eugene Ionesco: Rhinoceros	Analysis and appreciation
3.	Eugene Ionesco: Rhinoceros	Analysis and appreciation
4.	Eugene Ionesco: Rhinoceros	Analysis and appreciation
5.	Eugene Ionesco: Rhinoceros	Analysis and appreciation
6.	Eugene Ionesco: Rhinoceros	Analysis and appreciation
7.	Eugene Ionesco: Rhinoceros	Analysis and appreciation
8.	Eugene Ionesco: Rhinoceros	Analysis and appreciation
9.	Eugene Ionesco: Rhinoceros	Analysis and appreciation
10.	Eugene Ionesco: Rhinoceros	Analysis and appreciation
11.	Eugene Ionesco: Rhinoceros	Analysis and appreciation
12.	Eugene Ionesco: Rhinoceros – Avant-garde aspects	Analysis and appreciation
13.	Eugene Ionesco: Rhinoceros- Symbols	Analysis and appreciation
14.	Eugene Ionesco: Rhinoceros-Characterization	Analysis and appreciation
15.	Interactions/Presentations	Problem solving
16.	Interactions/Presentations	Problem solving



Signature of faculty

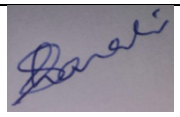
Digboi College: Department of English

Course Plan

(Jan-May 2023)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: **English Honours**
Class/Semester-: **Sixth**
Name of the Course/Paper: **DSE 5: Literary Theory**
Units Assigned: **III: Post-structuralism**
Marks Assigned: **20** **Class per week: 02**

Class	Topic/ Unit	Remarks
1.	a. Introduction to Literary theory	Objective is to familiarize the learners with literary theories and inspire in them a critical insight.
2.	Jacques Derrida: Structure, Sign and Play in the Discourse of Human Science	Analysis and appreciation
3.	Jacques Derrida: Structure, Sign and Play in the Discourse of Human Science	Analysis and appreciation
4.	Jacques Derrida: Structure, Sign and Play in the Discourse of Human Science	Analysis and appreciation
5.	Jacques Derrida: Structure, Sign and Play in the Discourse of Human Science	Analysis and appreciation
6.	Jacques Derrida: Structure, Sign and Play in the Discourse of Human Science	Analysis and appreciation
7.	Jacques Derrida: Structure, Sign and Play in the Discourse of Human Science	Analysis and appreciation
8.	Jacques Derrida: Structure, Sign and Play in the Discourse of Human Science	Analysis and appreciation
9.	Michel Foucault: Truth and Power	Analysis and appreciation
10.	Michel Foucault: Truth and Power	Analysis and appreciation
11.	Michel Foucault: Truth and Power	Analysis and appreciation
12.	Michel Foucault: Truth and Power	Analysis and appreciation
13.	Michel Foucault: Truth and Power	Analysis and appreciation
14.	Michel Foucault: Truth and Power	Analysis and appreciation
15.	Michel Foucault: Truth and Power	Analysis and appreciation
16.	Interactions	Problem solving



Signature of faculty

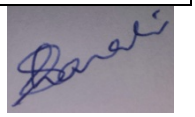
Digboi College: Department of English

Course Plan

(Jan-May 2023)

Name of the Teacher: **Dr. Pabitra Bharali**
Programme: **English Honours**
Class/Semester-: **Sixth**
Name of the Course/Paper: **DSE 7: Partition Literature**
Units Assigned: **III (part) & IV (part)**
Marks Assigned: **15** **Class per week: 01**

Class	Topic/ Unit	Remarks
1.	a. Introduction to partition literature	Objective is to familiarize the learners with partition literature, context of Indian partition and its literature and inspire in them a critical insight.
2.	Manik Bandhopadhya: The Final Solution	Analysis and appreciation
3.	Manik Bandhopadhya: The Final Solution	Analysis and appreciation
4.	Manik Bandhopadhya: The Final Solution	Analysis and appreciation
5.	Manik Bandhopadhya: The Final Solution	Analysis and appreciation
6.	Jibananda Das: I shall Return to this Bengal	Analysis and appreciation
7.	Jibananda Das: I shall Return to this Bengal	Analysis and appreciation
8.	Interactions	Problem solving



Signature of faculty

DIGBOI COLLEGE, DIGBOI

Course Plan (Session Jan - May) 2023

Department of Hindi

Name of the Teacher- **Dr. Pradeep Kumar Bharati**

Course –Honours / Generic – Honours

Class/Semester- B.A. 2nd Semester

Name of the Paper-Aadikaleen ewam Madhyakaleen Hindi Kavita, C-3

Units Assigned- Unit – 1 & Unit - 2

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Vidyapati Ka Sahityik Parichaya,	
3.	Bhal Har Bhal Hari Bhal Tua Kala- Vyakhaya	
4.	Nandak Nandan Kademberi Taroo Tare- Vyakhaya	
5.	Dekh Dekh Radha-Roop Apaar- Vyakhaya	
6.	Vidyapati Bhakt Kavi	
7.	Vidyapati Shringarik Kavi	
8.	Tutorial/Discussion.	
9.	Meerabaai Ka Sahityik Parichaya,	
10.	Meerabaai Ke Kavya Men Bhakti-Bhavana	
11.	Patiyan Main Kaise LikhooLikhyoroo Na Jaay- Vyakhaya	
12.	Payo Ji mai To Ram Ratan Dhan Payo- Vyakhaya	
13.	Ghayal Ki Gati Ghayal Janya- Vyakhaya	
14.	Question & Answer	
15.	Tutorial / Discussion	
16.	Kavir jeewan Parichaya	
17.	Kabir Samaj Sudharak	
18.	Dulahini Gayahu Mangal Char Vyakhaya	
19.	Awadhoo Mera Man Matimara Vyakhaya	
20.	Maya Maha Thagini Hum Jani Vyakhaya	
21.	Jayasi – Parichaya	
22.	Nagmati ka Viyog Varnan	
23.	Barahmasha 1&2 Vyakhaya	
24.	Barahmasha 3&4 Vyakhaya	
25.	Barahmasha 5&6 Vyakhaya	
26.	Barahmasha 7&8 Vyakhaya	
27.	Barahmasha 9&10 Vyakhaya	
28.	Barahmasha 11&12 Vyakhaya	
29.	Tutorial/ Discussion	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B.A. 2nd Semester

Name of the Paper- Aadhunik Hindi Kavita (Chhayaavad Tak), C-4

Units Assigned- Unit – 1 & Unit - 2

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Bharatendu Harishchandra Ka Sahityik Parichay	
3.	Hindi Bhasha- 15 Dohe (1-15)	
4.	Hindi Bhasha-1-5- Vyaakhyaa	
5.	Hindi Bhasha-6-10- Vyaakhyaa,	
6.	Hindi Bhasha-11-15 – Vyaakhyaa,	
7.	Hindi Bhasha- Question & Answer	
8.	Hindi Bhasha- Question & Answer	
9.	Tutorial / Discussion	
10.	Ayodhyasingh Upadhyaay' Hariaudha' -Sahityik Parichaya	
11.	Priyaprawas, (Shashtasarg) Pratham 6 Chhand	
12.	Priyaprawas- Vyaakhyaa	
13.	Priyaprawas – Vyaakhyaa,	
14.	Priyaprawas – Vyaakhyaa,	
15.	Question & Answer	
16.	Question & Answer	
17.	Tutorial / Discussion .	
18.	Maithilisharan Gupt - Sahityik Parichaya	
19.	Yashodhara- 1 – Vyaakhyaa	
20.	Yashodhara- 2 – Vyaakhyaa	
21.	Yashodhara- 1&2 – Saransh	
22.	Question & Answer	
23.	Tutorial / Discussion	
24.	Ramnaresh Tripathi - Sahityik Parichaya	
25.	Jeewan – Sandesh - Vyaakhyaa	
26	Jeewan – Sandesh - Vyaakhyaa	
27.	Question & Answer	
28.	Tutorial / Discussion	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B.A. 4th Semester

Name of the Paper- Bhasha Vigyan Aur Hindi Bhasha, C-8

Units Assigned- Unit – 3 & Unit - 4

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Vakya Vigyan – Swaroop	
3.	Vakya Vigyan ki Paribhasha	
4.	Vakya Vigyan – Prakar	
5.	Arth Vigyan – Swaroop	
6.	Arth Vigyan- Paribhasha	
7.	Arth Pariwartan ki Dishayen	
8.	Arth Pariwartan ki Dishayen	
9.	Arth Pariwartan ki Dishayen	
10.	Arth Parivatan Ke Karan	
11.	Arth Parivatan Ke Karan	
12.	Arth Parivatan Ke Karan	
13.	Arth Parivatan Ke Karan	
14.	Tutorial/ Discussion	
15.	Hindi Bhasha : Udbhav	
16.	Hindi Bhasha : Udbhav	
17.	Hindi Bhasha : Vikash	
18.	Hindi Bhasha : Vikash Kram	
19.	Devnagari Lipi – Swaroop	
20.	Devnagari Lipi – Naamkaran	
21.	Devnagari Lipi – Naamkaran	
22.	Devnagari Lipi – Visheshataayen	
23.	Devnagari Lipi – Visheshataayen	
24.	Devnagari Lipi – Visheshataayen	
25.	Tutorial / Discussion	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B.A. 4th Semester

Name of the Paper- Hindi Upanyas , C-9

Units Assigned- Unit – 2 & Unit - 4

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Jainendra Ki Upanyas Kala	
3.	Tyaagapatra– Upanyas Explanation	
4.	Tyaagapatra— Upanyas Explanation	
5.	Tyaagapatra– – Upanyas Explanation	
6.	Tyaagapatra— Upanyas Explanation	
7.	Tyaagapatra– – Upanyas Explanation	
8.	Tyaagapatra– – Upanyas Kala ke tatwa ki Samiksha	
9.	Tyaagapatra— Upanyas Kala ke tatwa ki Samiksha	
10.	Tyaagapatra— Upanyas ke Patron ka Charitra - Chitran	
11.	Tyaagapatra–Important Paragraph Ka Vyaakhya.	
12	Tyaagapatra–Important Paragraph Ka Vyaakhya.	
13.	Tutorial / Discussion	
14.	Manu Bhandari - Sahityik Parichaya	
15. .	Mahabhoj - Upanyas Explanation	
16.	Mahabhoj - Upanyas Explanation	
17.	Mahabhoj - Upanyas Explanation	
18.	Mahabhoj - Upanyas Explanation	
19.	Mahabhoj - Upanyas Explanation	
20.	Mahabhoj - Upanyas Explanation	
21.	Mahabhoj - Upanyas Explanation	
22.	Mahabhoj - Upanyas Explanation	
23.	Mahabhoj - Upanyas - Kalaa	
24.	Mahabhoj - Upanyas - Patra-Yojana	
25.	Tutorial / Discussion.	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester- B.A. 4th Semester

Name of the Paper- Hindi Kahani, C-10

Units Assigned- Unit –1& Unit -2

Marks Assigned - 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Chandradhar Sharma Guleri- Parichaya,	
3.	'Usane Kaha tha' Kahani,	
4.	'Usane Kaha tha' Kahani	
5.	'Usane Kaha tha' Kahani	
6.	'Usane Kaha tha' Kahani	
7.	'Usane Kaha tha' Kahani Patra Yojana,	
8.	'Usane Kaha tha'' Kahani- Kala ke Tatwa ki Samiksha,	
9.	'Usane Kaha tha'' Kahani ki Vyaakhyaa	
10.	Premachand ka Parichaya	
11.	'Poos ki Raat'- Kahani	
12.	'Poos ki Raat'- Kahani	
13.	'Poos ki Raat'- Kahani	
14.	'Poos ki Raat'- Kahani Malabe ka Malik'- Kahani ki Samiksha	
15.	'Poos ki Raat'- Kahani Malabe ka Malik'- Kahani ki Patra Yojana	
16.	Halku ka Charitra-Chitran	
17.	'Poos ki Raat'- Kahani ki Important Lines Ki Vyaakhyaa.	
18.	'Poos ki Raat'- Kahani ki Important Lines Ki Vyaakhyaa.	
19.	Tutorial / Discussion	
20.	Jayshankar Prasad ka Parichaya	
21.	Aakashadeep Kahani	
22.	Aakashadeep Kahani	
23.	Aakashadeep Kahani	
24.	Aakashadeep Kahani – Kahani- Patra Yojana	
25.	Aakashadeep Kahani – Kahani – Kala ke Aadhar Par Samiksha	
26.	Aakashadeep Kahani – Kahani ki Vyaakhyaa	
27.	Aakashadeep Kahani – Kahani ki Vyaakhyaa	
28.	Tutorial / Discussion	
29.	Jainendra – Parichaya	
30.	Paajeb Kahani	
31.	Paajeb – Kahani	
32.	Paajeb – Kahani	
33.	Paajeb– Kahani ki Samiksha	
34	Paajeb– Kahani ki Vyaakhyaa	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester-B.A. 6th Semester

Name of the Paper- Hindi ki Sahityik Patrakarita (C-13)

Units Assigned- Unit -1 & Unit-2

Marks Assigned- 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Introduction of Sahityik Ptrakarita	
3.	Introduction of Sahityik Ptrakarita	
4.	Arth - Sahityik Ptrakarita	
5.	Sahityik Ptrakarita ki Awadharana	
6.	Sahityik Ptrakarita ki Awadharana	
7.	Sahityik Ptrakarita ki Awadharana	
8.	Sahityik Ptrakarita ka Mahatwa	
9.	Sahityik Ptrakarita ka Mahatwa	
10.	Bhartenduyugin Sahityik Ptrakarita ka Parichay	
11.	Bhartenduyugin Sahityik Ptrakarita ka Parichay	
12.	Bhartenduyugin Sahityik Ptrakarita ki Pravrittiyan	
13.	Bhartenduyugin Sahityik Ptrakarita ki Pravrittiyan	
14.	Dwivediyugin Sahityik Ptrakarita ka Parichay	
15.	Dwivediyugin Sahityik Ptrakarita ki Pravrittiyan	
16.	Premchandyugin Sahityik Ptrakarita ka Parichay	
17.	Premchandyugin Sahityik Ptrakarita ki Pravrittiyan	
18.	Chhayavadyugin Sahityik Ptrakarita ka Parichay	
19.	Chhayavadyugin Sahityik Ptrakarita ka Parichay	
20.	Chhayavadyugin Sahityik Ptrakarita ki Pravrittiyan	
21.	Chhayavadyugin Sahityik Ptrakarita ki Pravrittiyan	
22.	Question/Answer	
23.	Question/Answer	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester-B.A. 6th Semester

Name of the Paper- Prayojanmoolak Hindi (C-14)

Units Assigned- Unit – 3 & Unit -4

Marks Assigned- 20+20

Class	Topic/ Unit	Remarks
1.	Itroduction	
2.	Ptron ke Prakar	
3.	Sarkari Ptron ke Prakar	
4.	Sarkari Patra	
5.	Sarkari Ptra Lekhan ki Vidhi	
6.	Ardha Sarkari Patra	
7.	Ardha Sarkari Patra Lekhan ki Vidhi	
8.	Gyapan	
9.	Paripatra	
10.	Anusmarak	
11.	Soochana	
12.	Adhisoochana	
13.	Karyalaya Aadesh	
14.	Intoduction of Tippan	
15.	Tippan ke Prakar	
16.	Tippan ki Visheshata	
17.	Aalekhan ki Visheshata	
18.	Aalekhan ka Mahatwa	
19.	Sanchar Madhyam	
20.	Sanchar Madhyam Ka Prakar	
21	Aakashvani	
22	Doordarshan	
23	Chalchitra	
24	Paribhashik Shabd Nirman ki Prakriya	
25	Paribhashik Shabd Nirman ki Prakriya	
26	Paribhashik Shabd Nirman ka Prayog	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester-B.A. 6th Semester

Name of the Paper- Tulsidas (DSE-3)

Units Assigned- Unit –3 & Unit-4

Marks Assigned- 20+20

Class	Topic/ Unit	Remarks
1,	Introduction	
2.	Kavitawali Ka Parichay	
3.	Bhakti Kavya men Kavitawali ka Sthan	
4.	Kavitawali – Uttarkand Pad Sankhya – 29, 35	
5.	Kavitawali – Uttarkand Pad Sankhya – 37, 44	
6.	Kavitawali – Uttarkand Pad Sankhya – 45, 60	
7.	Kavitawali – Uttarkand Pad Sankhya – 67, 73	
8.	Kavitawali – Uttarkand Pad Sankhya – 74, 84	
9.	Geetawali Ka Parichay	
10.	Geetawali ka Varnya Vishay	
11.	Getawali – Balkand Pad Sankhya - 07, 08	
12.	Getawali – Balkand Pad Sankhya - 09, 10	
13.	Getawali – Balkand Pad Sankhya – 18, 24	
14.	Getawali – Balkand Pad Sankhya - 26, 31	
15.	Getawali – Balkand Pad Sankhya - 33, 36	
16.	Vinay Patrika Ka Parichay	
17.	Vinay Patrika Ka Mahatwa	
18.	Vinay Patrika Me Bhakti	
19.	Vinay Patrika Pad Sankhya ki Vyakhya - 01, 05	
20.	Vinay Patrika Pad Sankhya ki Vyakhya - 17, 30	
21	Vinay Patrika Pad Sankhya ki Vyakhya - 36, 41	
22	Vinay Patrika Pad Sankhya ki Vyakhya - 45, 72	
23	Vinay Patrika Pad Sankhya ki Vyakhya - 78,79	
24	Question/Answer	
25	Question/Answer	
26	Question/Answer	

Name of the Teacher- Dr. Pradeep Kumar Bharati

Course –Honours / Generic – Honours

Class/Semester-B.A. 6th Semester

Name of the Paper- Premchand (DSE-4)

Units Assigned- Unit – 3 & Unit - 4

Marks Assigned- 20+20

Class	Topic/ Unit	Remarks
1.	Introduction	
2.	Premchand ka Shityik Parichay	
3.	Sahitya Ka Uddeshya Nibandh Ka Itihas	
4.	Sahitya Ka Uddeshya Nibandh ka Paath	
5.	Sahitya Ka Uddeshya Nibandh ka Paath	
6.	Sahitya Ka Uddeshya Nibandh ka Paath	
7.	Kahanikar Premchand ka Parichay	
8.	Panch Prameshwar Kahani ka Saransh	
9.	Panch Prameshwar Ki Tatvik Samikisha	
10.	Panch Prameshwar ka Paath	
11.	Do Bailon ki Katha Ka Saransh	
12.	Do Bailon ki Katha Ka Tatvik Samiksha	
13.	Do Bailon ki Katha Ka Paath	
14.	Do Bailon ki Katha Ka Paath	
15.	Shataranj ke Khiladi Kahani ka Saransh	
16.	Shataranj ke Khiladi Kahani ka Tatvik Samiksha	
17.	Shataranj ke Khiladi Kahani ka Paath	
18.	Shataranj ke Khiladi Kahani ka Paath	
19.	Idgaah Kahani ka Saransh	
20.	Idgaah Kahani ka Tatvik Samiksha	
21	Idgaah Kahani ka Paath	
22	Idgaah Kahani ka Paath	
23	Doodh ka Daam Kahani ka Saransh	
24	Doodh ka Daam Kahani ka Tatvik Samiksha	
25	Doodh ka Daam Kahani ka Paath	
26	Doodh ka Daam Kahani ka Paath	
27.	Question / Answer	

COURSE PLAN, Even Semester, January-Jun, 2023
DEPARTMENT OF EDUCATION

Name of the Teacher: **DR. POBAN GOGOI**
Course - Honours/Generic: Honours
Class/Semester: II
Name of the Paper: **PSYCHOLOGICAL FOUNDATIONS OF EDUCATION**
Units Assigned: I & III
Marks Assigned: 16

Sl. No. of classes	Topic/ Unit		Remarks
1	**Unit:I**	Meaning and nature of psychology	
2		Schools of Psychology: Behaviourism	
3		Structuralism	
4		Functionalism	
5		Gestalt Psychology	
6		Psycho-analysis	
7		Constructivism	
8		Meaning of Educational Psychology	
9		Nature Educational Psychology	
10		Scope of Educational Psychology	
11		Importance of Educational Psychology in classroom teaching	
13	**Unit:III**	Meaning and nature of intelligence	
14		Factors of Intelligence: Heredity and Environment	
15		Theories of intelligence: Monarchic theory	
16		Spearman's two factors theory	
17		Multifactor theory & Group factor theory	
18		Guilford's Structure of Intellect (SoI)	
19		Concept of Emotional Intelligence	
20		Creativity: Meaning and nature	
21		Process and Product of creativity	
22		Stages of Creativity: Preparation, Incubation, inspiration, revision and verification	
23		Nurturing Creativity in Classrooms	
24		Meaning and nature of gifted children, difference between creativity and giftedness	
25		Education of Exceptional children: Gifted learner	
26		Education of Exceptional children: Slow learner	
27		Education of Exceptional children: Educable, trainable, mentally challenged	
		Total classes	**27**

COURSE PLAN, Even Semester, January-Jun, 2023

DEPARTMENT OF EDUCATION

Name of the Teacher: **DR. POBAN GOGOI**
Course - Honours/Generic : Honours
Class/Semester: II
Name of the Paper: **EDUCATIONAL MANAGEMENT AND ADMINISTRATION**
Units Assigned: I & V
Marks Assigned: 32

Sl. No. of classes	Topic/ Unit		Remarks
1	**Unit: I**	Meaning of Educational Management	
2		Nature & Scope of Educational Management	
3		Functions of Educational Management	
4		Types of Educational Management	
5		Types of Educational Management	
6		Difference between Management and Administration	
7		Management of Resources in Educational Institutions	
8		Management of Resources in Educational Institutions	
9		Management of Resources in Educational Institutions	
10		Management of Resources in Educational Institutions	
11		Management by Objectives	
12		Total Quality management	
13		SWOT analysis	
14	**Unit: III**	Meaning and Nature of educational planning	
15		Scope of educational planning	
16		Need of educational planning	
17		Principles of educational planning	
18		Types of Educational planning	
19		Do	
20		Do	
21		Factors affecting educational Plan	
22		Concept and importance of School Development Plan	
		Total class	**22**

COURSE PLAN, Even Semester, January-Jun, 2023
DEPARTMENT OF EDUCATION

Name of the Teacher: **DR. POBAN GOGOI**
Course - Honours/Generic: Honours
Class/Semester: IV
Name of the Paper: **EDUCATION IN PRE-INDEPENDENT INDIA**
Units Assigned: **All**
Marks Assigned: 80

Sl. No. of classes	Topic/ Unit		Remarks
1	**Unit: I**	Education in Ancient India	
2		Education in Vedic and Buddhist Period with special reference to its salient features	
3		Aims and Objectives System of Administration and Finance	
4		Method of Teaching Types of Organisation of Educational Institution	
5		Curriculum Teacher-Pupil Relationship	
6		Women's Education during Vedic and Buddhist Period	
7		Education in Medieval India (Islamic System of Education)	
8		Islamic System of Education with special reference to its Salient Features	
9		Islamic System of Education with special reference to its Aims and Objectives	
10		Islamic System of Education with special reference to its System of Administration and Finance	
11		Islamic System of Education with special reference to its Types of Organisation of Educational Institution	
12		Islamic System of Education with special reference to its Curriculum	
13		Islamic System of Education with special reference to its Women Education during Islamic Period	
14		Comparison among the Vedic, Buddhist and Islamic education system.	
15	**Unit: II**	Education during British Period & Indigenous System of Education during British rule	
16		Meaning of indigenous education Types of indigenous educational institution Causes of downfall of Indigenous education	
17		Educational activities of Missionaries in India - The Portuguese	
18		Educational activities of Missionaries in India - The Danish	
19		Educational activities of Missionaries in India	

		- The Dutch	
20		Educational activities of Missionaries in India - The French - The British	
21		Centres of Missionary Education in India	
22		Educational activities of Missionaries in Assam	
23		Educational activities of East India Company - Charter Act, 1813	
24		Orientalist and Anglicist Controversy	
25		Macaulay's Minute, 1835	
26		Bentinck's declaration of educational policy	
27	**Unit: III**	Wood's Despatch 1854	
28		Wood's Despatch 1854	
29		Hunter's Commission, 1882	
30		Hunter's Commission, 1882	
31		Lord Curzon's Educational Policy	
32		Do	
33		Do	
34		The Indian University Commission, 1902	
35		University Act, 1904	
36		National Movement / Rise of Nationalism	
37		Gokhale's Bill on Primary Education (1910-12)	
38		Government resolution on Educational policy, 1913	
39		Calcutta University Commission, 1917	
40	**Unit: IV**	Education under Dyarchy - Primary Education	
41		Education under Dyarchy - Secondary Education	
42		Education under Dyarchy -Expansion of education	
43		Simon Commission	
44		Government of India Act of 1921	
45		Hartog Committee Report 1929	
46		Do	
47		Wardha Scheme of Basic Education, 1937 - Wardha Education Conference 1937	
48		Salient features of Basic Education	
49		Causes of failure of this education in India	
50		Wood Abbot Report 1937	
51		Sargent Committee Report, 1944	
52		Do	
		Total	**52**

COURSE PLAN, Even Semester, January-Jun, 2023
DEPARTMENT OF EDUCATION

Name of the Teacher: **DR. POBAN GOGOI**
Course – Honours **(601)**
Class/Semester: V**I**
Name of the Paper: **Emerging Trends in Indian Education**
Units Assigned: **All**
Marks Assigned: **80**

Sl. No. of classes	Topic/ Unit		Remarks
1	**Unit: I**	The Indian Constitution (especially the Preamble, Fundamental Rights and Duties of Citizens and the Directive Principles of State Policies)	
2		Do	
3		Do	
4		Education in Indian Constitution Need for including education in constitution	
5		Central, State and Concurrent lists	
6		Articles in the Constitution related to Education	
7		Do	
8		Do	
9		Do	
10		Do	
11		Constitution as a source of aims of education	
12		Role of Constitution in equalizing the Educational opportunities.	
13	**Unit: II**	Early Childhood Care & Education (ECCE) in India	
14		Do	
15		Elementary Education (EE) in India	
16		Do	
17		Secondary Education (SE) in India	
18		Do	
19		Higher Education (HE) in India	
20		Do	
21		Teacher Education in India	
22		Do	
23		Technical and Vocational Education in India	
24		Do	
25		Professional Education in India, Need and Challenges of Professional Education in India	

26		Do	
27	Unit: III	Environmental Education	
28		**Do**	
29		Women Education	
30		Do	
31		Concept, Objectives & Challenges of Inclusive Education	
32		Role of RCI, PWD act in addressing Inclusive education	
33		Alternative Education	
34		Do	
35		Adult Education	
36		Do	
37		Population Education	
38		Do	
39		Human Rights Education	
40		Do	
41		Value and Peace Education	
42		Do	
43	Unit: IV	Concept & Challenges of ICT based Education	
44		ICT devices used in curriculum transaction	
45		Concept & nature of CCE	
46		Tools & Techniques of CCE	
47		Education and National development	
48		Education as a development indicator	
49		Role of Education in Human Resource Development	
50		Aims of education & curriculum with reference to NCF 2005	
51		Challenges of curriculum construction at Elementary and Secondary level	
52		Concept of Privatization and Commercialization of Education	
53		Impact of Privatization and Commercialization in Indian Education	
54	Unit: v	Youth unrest	
55		AIDs	
56		Substance abuse	
57		Health and Hygiene	
58		Student politics	
59		Concepts of Millennium Development Goals (MDGs)	
60		Concept and importance of Education for All (EFA)	
61		Education in the context of Liberalization, Privatization & Globalization (LPG)	
62		Role of UNESCO	
63		Role of UNICEF in educating the world community	
		Total	**63**

NAME OF THE TEACHER: DR. RASHMI PATOWARY

DETAILS OF COURSES ASSIGNED FOR THE SESSION:

2021-2022 (Even semester)

UNDERGRADUATE					
Sl. No	**CLASS**	**PAPER CODE**	**PAPER TITLE**	**UNITS**	**Marks**
I	SEM-II (HONOURS) (CBCS)	PHYSICS -C-IV	WAVES AND OPTICS (4 CREDITS)	IV to IX	33
II	SEM-II (GENERIC) (CBCS)	PHYSICS-GE-IV	WAVES AND OPTICS (4 CREDITS)	IV,V,VI,VII	37
III	SEM-IV (HONOURS) (CBCS)	PHYSICS -C-V	MATHEMATICAL PHYSICS-III (4 CREDITS)	FULL	60
IV	SEM-VI (MAJOR) (NCBCS)	PHYM-603	NUCLEAR PHYSICS	FULL	60
POST-GRADUATE					
VI	SEM-II (CBCS)	PH-DSE-IIA	PLASMA PHYSICS (4 CREDITS)	FULL	60
VII	SEM-IV (CBCS)	PH-C-IX	NUCLEAR PHYSICS (4 CREDITS)	FULL	60

(EVEN SEMESTER: 2022-2023)

COURSE PLAN

Course –Physics Honours
Semester- II
Paper Code: PH-C-IV
Name of the Paper-WAVES AND OPTICS
Units Assigned-VII-XI
Marks Assigned:33

Class	UNIT	Topic/ Unit	Marks
1	**UNIT:VII Interference**	Division of amplitude and wavefront:	**9 Marks**
2		Young's double slit experiment	
3		Lloyd's Mirror and Fresnel's Biprism.	
4		Phase change on reflection: Stokes' treatment	
5		Interference in Thin Films: parallel and wedge-shaped films.	
6		Fringes of equal inclination (Haidinger Fringes)	
7		Fringes of equal thickness (Fizeau Fringes)	
8		Newton's Rings	
9		Measurement of wavelength and refractive with the help of Newton's ring	
10	UNIT:VIII **Interferometer**	Introduction to interferometry, Interferometers, Types of interferometer	4 marks
11		Michelson Interferometer Idea of form of fringes	
12		)Determination of Wavelength, Wavelength Difference	
13		Refractive Index, and Visibility of Fringes.	
14		Fabry-Perot interferometer	
15	UNIT: IX **Diffraction**	Kirchhoff's Integral Theorem	**2 Marks)**
16		Fresnel-Kirchhoff's Integral formula.	
17	UNIT: IX **Fraunhofer**	Diffraction, Fresnel and Fraunhoffer,	**8 Marks**
18		Composition of SHM by vector addition of amplitudes, Fraunhofer diffraction at a	

	diffraction	Single slit	
19		Fraunhofer diffraction at a Circular aperture	
20		Fraunhofer diffraction at Double slit.	
21		Fraunhofer diffraction at Multiple slits.	
22		Resolving Power of a telescope	
23		Diffraction grating	
24		Resolving power of grating	
25	UNIT: X **Fresnel Diffraction**	Fresnel's Assumptions.	**7 Marks**
26		Fresnel's Half-Period Zones for Plane Wave	
27		Explanation of Rectilinear Propagation of Light.	
28		Theory of a Zone Plate: Multiple Foci of a Zone Plate.	
29		Fresnel's Integral,	
30		Fresnel diffraction pattern at a straight edge	
31		Fresnel diffraction pattern at a slit and at a wire	
32			
33	UNIT: XI **Holography** **3 Lectures**	Principle of Holography. Recording and Reconstruction Method	**3 Marks)**
34		Theory of Holography as Interference between two Plane Waves .Point source holograms.	
35		Summing up	

Course –Physics GENERIC
Semester- II
Paper Code: GE-4
Name of the Paper-WAVES AND OPTICS
Units Assigned-V,VI,VII
Marks Assigned

Class	UNIT	Topic/ Unit	Marks
1	**Unit IV** 15 lectures **Interference, Michelson's Interferometer** **15 Lectures**	Interference: Division of amplitude and division of wavefront.	15 marks
2		Young's Double Slit experiment.	
3		Lloyd's Mirror and Fresnel's Biprism, principle and working	
4		Phase change on reflection: Stokes' treatment.	
5		Interference in Thin Films: parallel and wedge-shaped films.	
6		Fringes of equal thickness (Fizeau Fringes).	
7		Fringes of equal inclination (Haidinger Fringes);	
8		Newton's Rings:	
9		measurement of wavelength and refractive index by Newton's ring method	
10		Interferometers, Michelson's interometer	
11		Idea of form of fringes, Visibility of fringes	
		Determination of wavelength, Wavelength difference	
12		Determination of Refractive index	
13	**Unit VI Diffraction: 14 Lectures**	Recap: Diffraction : Fraunhofer and fresnel's and conditions under which these hold.	**14 Marks**
14		Fraunhofer diffraction at Single slit.	
15		Fraunhofer diffraction at Double Slit.	
16		Fraunhofer diffraction at Multiple slits.	
17		Diffraction grating	
18		Fresnel Diffraction	
19		Half-period zones	
20		Zone plate	
21		Fresnel Diffraction pattern at a straight edge	

22		Fresnel Diffraction pattern at a a slit using half-period zone analysis	
23		Fresnel Diffraction pattern at a wire using half-period zone analysis	
24		Numericals on the above	
25		Sum-Up of diffraction	
26	**Unit VII** **Polarization**	Transverse nature of light waves, polarization of light,.	**5 Marks**
27	**5 Lectures**	Plane polarized light : production of Plane polarized light	
28		Brewsters law, Malus law	
29		Analysis of Plane polarized light,	
30		Sum-up of polarization of light	
31		Sum-up of the whole syllabus.	

Course –Physics Honours
Semester- IV
Course Code: PHYSICS-C-VIII
Course Title: MATHEMATICAL PHYSICS-III
Nature of the Course: Core
Total Credits assigned: 06
Units Assigned- Full paper
Marks Assigned- 60

Class	UNIT	Topic/ Unit	Marks
1	**UNIT:I Complex Variables 23 classes**	Brief Revision of Complex Numbers and their Graphical Representation,...	**30 Marks**
2		Euler's formula, De Moivre's theorem, Roots of Complex Numbers	
3		Numericals on the above topics	
4		Functions of Complex Variables	
5		Analyticity of functions of complex variables, Examples of analytic functions	
6		Cauchy-Riemann Conditions, harmonic functions	
7		Proof of Cauchy-Riemann Conditions in Cartesian and polar co-ordinates	
8		Miscellaneous numerical on Cauchy-Riemann Conditions	
9		Tutorial	
10		Singular functions: poles and branch points, order of singularity	
11		Branch cuts.	
12		Tutorial	
13		Integration of a function of a complex variable	
14		Cauchy's Inequality	
15		Cauchy’s Integral formula	
16		Tutorial	
17		Simply and multiply connected region	
18		Laurent and Taylor’s expansion	
19		Tutorial	
20		Residues and Residue Theorem	
21		Application in solving Definite Integrals	
22		Tutorial	
23		Sum-UP	
24	**UNIT:II**	Necessity and applications of Fourier Transforms Fourier Integral theorem	**15 Marks**

25	Fourier Transforms	Fourier Transform. Examples.	
26		Tutorial	
27		Fourier transform of trigonometric, Gaussian, finite wave train & other functions.	
28		Tutorial	
29		Representation of Dirac delta function as a Fourier Integral	
30		Fourier transform of derivatives	
31		Inverse Fourier transform	
32		Tutorial	
33		Properties of Fourier transforms (translation, change of scale, complex conjugation, etc.	
34		Three dimensional Fourier transforms and their examples.	
35		Convolution theorem.	
36		Application of Fourier Transforms to differential equations: One dimensional Wave equation.	
37		Application of Fourier Transforms to Diffusion/Heat Flow Equations	
38		SUM-UP	
39	UNIT: III **Laplace Transforms**	Laplace Transform (LT) of Elementary functions.	**15 Marks**
40		Properties of Laplace Transform	
41		Change of Scale Theorem, Shifting Theorem.	
42		Tutorial	
43		LTs of 1st and 2nd order Derivatives and Integrals of Functions,	
44		Derivatives and Integrals of LTs	
45		LT of Unit Step function, Dirac Delta function,	
46		LT of Periodic Functions. Convolution Theorem.	
47		Tutorial	
48		Application of Laplace Transforms to 2nd order Differential Equations:	
49		Damped Harmonic Oscillator, Simple Electrical Circuits	
50		Coupled differential equations of 1st order.	
51		Solution of heat flow along infinite bar using Laplace transform	
52		Tutorial	
53		Summing up	

Course –Physics MAJOR
Semester-VI
Course Code: PHYSICS-DSE-3
Course Title: NUCLEAR PHYSICS
Nature of the Course: Core
Units Assigned- Full paper
Marks Assigned- 80

Class	UNIT	Topic/ Unit	marks
1	**UNIT:I General Properties of Nuclei**	Charge density (matter density), binding energy, average binding energy and its variation with mass number	**10 Marks**
2		Main features of binding energy versus mass number curve, N/A plot,	
3		Angular momentum, parity, magnetic moment	
4		Electric moments, nuclear excites states.	
5	**UNIT:II Nuclear Models**	Liquid drop model approach, semi empirical mass formula and significance of its various terms	**13 Marks**
6		condition of nuclear stability, two nucleon separation energies,	
7		Fermi gas model (Degenerate fermion gas, nuclear symmetry potential in Fermi gas)	
8		evidence for nuclear shell structure, nuclear magic numbers	
9		basic assumption of shell model,	
10		concept of mean field, residual interaction concept of nuclear force,	
11	**UNIT:III Radioactivity decay**	Basics of radioactivity,laws of radioactivity	**10 Marks**
12		Alpha decay: basics of α-decay processes,	
13		Range , Geiger Nuttall law, α-decay spectroscopy	
14		Theory of α-emission, Gamow factor ,	
15		β-decay: energy kinematics for β-decay, positron emission, electron capture,	
16		Neutrino hypothesis	
17		Gamma decay: Gamma rays emission & kinematics, internal conversion	
18	**UNIT:IV Nuclear Reactions**	Nuclear reactions and its different types.	**9 Marks**
19		Conservation Laws, , Q-value	
20		kinematics of reactions, reaction rate	
21		Reaction cross section, Concept of compound and direct Reaction	

22		Resonance reaction, Coulomb scattering(Rutherford scattering).	
23	**UNIT:V Interaction of Nuclear Radiation with matter**	Idea of how nuclear radiation interact with matter	**9 Marks**
24		Energy loss of electrons, Energy loss due to ionization (Bethe-Block formula),	
25		Cerenkov radiation	
26		Gamma ray interaction through matter,	
27		Photoelectric effect, Compton scattering, pair production	
28		Neutron interaction with matter	
29	**UNIT:VI Detector for Nuclear Radiations**	Nuclear detectors and different types. Idea of gas detectors, regions of a gas filled counter.	9 marks
30		estimation of electric field, mobility of particle, for ionization chamber, proportional counter.	
31		GM Counter and its various aspects	
32		Basic principle of Scintillation Detectors and construction of photo-multiplier tube (PMT).	
33		Semiconductor Detectors (Si and Ge) for charge particle and photon detection (concept of charge carrier and mobility),	
34		Neutron detector	
35	**UNIT:VII Particle Accelerators**	Linear accelerator,	5 marks
36		Cyclotron, Synchrotrons	
37		Van-de Graaff generator (Tandem accelerator), Accelerator facility available in India.	
38	**UNIT:VIII Particle Physics**	Fundamental interactions among elementary particles. Particle interactions; basic features,	15 marks
39		Classification of elementary particles, types of particles and its families	
40		Symmetries and Conservation Laws: energy and momentum, angular momentum, parity, baryon number, Lepton number, Isospin, Strangeness and charm	
41		Continued.	
42		Standard model, quark s, color quantum number and gluons	

Class	UNIT	Topic/ Unit	marks
1	**Unit I:**	Introduction to plasma , Definition of plasma, quasi-neutrality	**Marks 12**
2	**(L 8, T 4,)**	Concept of temperature,	
3		Debye shielding	
4		plasma parameters,	
5		criterion for plasma	
6		Classification of Plasma	
7		Applications of Plasma Physics	
8	**Unit II:** **(L 8, T 6)**	Single particle motion: motion of a charged particle in uniform magnetic field diffusion across magnetic fields	**Marks 14**
9		Motion of a charged particle in uniform electric field	
10		TUTORIAL	
11		Motion of a charged particle in uniform electric and magnetic field	
12		Motion of a charged particle in non-uniform electric field	
13		TUTORIAL	
14		Motion of a charged particle in non-uniform magnetic field,	
15		TUTORIAL	
16		Magnetic mirror and related concepts	
17		Motion of a charged particle in time varying electric field magnetic field	
18		Motion of a charged particle in time varying electric field magnetic field	
19		Adiabatic invariants,	
20		TUTORIAL	
21	**Unit III:**	Plasma as fluids: Introduction	**Marks 17**
22	**(L 10, T 5)**	relation of plasma physics to ordinary electromagnetics,	
23		TUTORIAL	
24		Fluid equation of motion	

25		TUTORIAL	
26		Convective derivative	
27		Fluid drifts perpendicular to B	
28		Fluid drifts perpendicular to B contd	
29		TUTORIAL	
30		Fluid drifts parallel to B	
31		Fluid drifts parallel to B continued	
32		TUTORIAL	
33		Plasma approximation	
34		TUTORIAL	
35		Plasma confinement	
36	**Unit IV: (L12, T4)**	Wave phenomena in plasma	**Marks 17**
37		phase and group velocities	
38		plasma oscillation, electron plasma waves	
39		TUTORIAL	
40		ion-acoustic waves	
41		Propagation parallel to the magnetic	
42		Propagation parallel to the magnetic continued	
43		TUTORIAL	
44		Propagation perpendicular to the magnetic	
45		Propagation perpendicular to the magnetic continued	
46		TUTORIAL	
47		propagation through ionosphere and magnetosphere	
48		TUTORIAL	
49		Space and Astrophysical Plasma, Van Allen Belts	
50		Space and Astrophysical Plasma continued	
51		Sum-Up	

Class	UNIT	Topic/ Unit	Marks
1	**Unit I: (L 10)**	Review of nuclear properties	**Marks 10**
2		Review of quantum properties of the nucleus	
3		Paulis Spin formalism	
4		Isospin	
5		Nuclear Forces and its properties.	
6		Exchange forces: Four types	
7		Isotopic spin formalism	
8		Generalized Pauli's exclusion principle	
9		meson theory of nuclear forces	
10		Review	
11	**Unit II: (L 18)**	Two body problem as a study of nuclear force, bound state of two nucleons	**Marks 18**
12		Deuteron and its experimentally observed properties.	
13		Solution of schrodinger's equation for Deuteron, minimum depth of potential well	
14		Deuteron Wave function, probability of the deuteron to be in a bound state, radius of the deuteron	
15		Ground and excited states of deuteron	
16		General form of nucleon-nucleon forces	
17		Nucleon-nucleon scattering at low energies	
18		Ground states and excited states	
19		Central and tensor forces	
20		Nuclear models: Review of liquid drop model and its applications,	
21		Shell model and explanation of magic numbers.	
22		L-S coupling	
23		Magnetic moment and Schmidt lines,	
24		limitations of the shell model	
25	**Unit III: (L15)**	Nuclear reactions: Reaction channels, , , , , , , and general features of β-ray spectrum, ,.	**Marks 15**
26		scattering cross-section	
27		nuclear reaction mechanisms	
28		compound nucleus	
29		Partial wave analysis of nuclear reaction	

30		-do-	
31		Breit-Wigner single level formula, , resonance	
32		-do-	
33		B-W formula incorporating spin,	
34		Nuclear fission	
35		β-decay, β-spectrum, inability to explain spectrum.	
36		neutrino hypothesis and explanation of β-ray spectrum	
37		Fermi's theory of β-decay	
38		-do-	
39		Curie plot, selection rules	
40	**Unit IV: (L12)**	Elementary Particle Physics: The four Fundamental forces, , , and.	**Marks 12**
41		Elementary particles and their classification	
42		Characteristics of the elementary particles	
43		Quantum numbers, behaviour under charge conjugation, time reversal and parity operation	
44		Elementary particles allowed or forbidden on basis of conservation laws examples	
45		Isotopic multiplet and Gellmann-Nishijima scheme	
46		Quark model, Standard model	
47		SU (3) classification	
48	**Unit V: (L 5)**	Detection of radiations	**Marks 5**
49		Gas filled counters	
50		Continued	
51		scintillation detectors,	
52		semiconductor detectors	
53		Numerical	

COURSE PLAN (2022-23)

DIGBOI COLLEGE, DIGBOI

Name of the teacher- Dr. Reepa Sarmah

Course- Honours / Generic- Honours

Class/semester – 2nd semester

Name of the Paper – Indian Logic (C 4)

Units Assigned – Full (4 units)

Marks Assigned – 80

Class	Topic/Unit	Remarks
1	Nature of Indian Logic	Explain
2	Nature of Indian Logic	Explain
3	Nature of Indian Logic	Explain &Provided Notes
4	Development of Indian Logic	Explain &Provided Notes
5	Development of Indian Logic	Explain
6	Development of Indian Logic	Explain
7	Development of Indian Logic	Explain
8	Indian Logic and Epistemology	Explain
9	Indian Logic and Epistemology	Explain
10	Indian Logic and Epistemology	Explain &Provided Notes
11	Classification of Knowledge by Nyaya	Explain
12	Classification of Knowledge by Nyaya	Explain
13	Prama	Explain
14	Prama	Explain
15	Prama	Explain
16	Prama	Explain &Provided Notes
17	Aprama	Explain
18	Apram	Explain
19	Apram	Explain &Provided Notes
20	Pramanas as the Karana of Prama	Explain
21	Pramanas as the Karana of Prama	Explain
22	Pramanas as the Karana of Prama	Explain &Provided Notes
23	Characteristics of Pramanas	Explain
24	Characteristics of Pramanas	Explain
25	Characteristics of Pramanas	Explain &Provided Notes
26	Kinds of Pramanas	Explain
27	Kinds of Pramanas	Explain
28	Kinds of Pramanas	Explain &Provided Notes
29	Nyaya pratyaksa	Explain

30	Nyaya pratyaksa	Explain
31	Nyaya pratyaksa	Explain &Provided Notes
32	Mimamsa Pratyaksa	Explain
33	Mimamsa Pratyaksa	Explain
34	Mimamsa Pratyaksa	Explain &Provided Notes
35	Definition of Anumana	Explain
36	Definition of Anumana	Explain &Provided Notes
37	Constituents of Anumana	Explain
38	Constituents of Anumana	Explain
39	Constituents of Anumana	Explain
40	Constituents of Anumana	Explain &Provided Notes
41	Kinds of Anumana	Explain
42	Kinds of Anumana	Explain
43	Kinds of Anumana	Explain &Provided Notes
44	Paksata	Explain
45	Paksata	Explain
46	Paksata	Explain &Provided Notes
47	Vyapti	Explain
48	Vyapti	Explain &Provided Notes
49	Ascertainment of Vyapti	Explain
50	Ascertainment of Vyapti	Explain
51	Ascertainment of Vyapti	Explain &Provided Notes
52	Types of Vyapti	Explain
53	Types of Vyapti	Explain
54	Types of Vyapti	Explain &Provided Notes
55	Marks of Valid Reason	Explain
56	Nyaya Hetabhasa	Explain
57	Nyaya Hetabhasa	Explain &Provided Notes
58	Nyaya Hetabhasa	Explain
59	Nyaya Hetabhasa	Explain
60	Nyaya Hetabhasa	Explain
61	Nyaya Hetabhasa	Explain

COURSE PLAN (2022-23)

DIGBOI COLLEGE, DIGBOI

Name of the teacher- Dr. Reepa Sarmah

Course- Honours / Generic- Honours

Class/semester – 4 th semester

Name of the Paper – SOCIAL AND POLITICAL PHILOSOPHY (C 9)

Units Assigned – Full (4 units)

Marks Assigned – 80

Class	Topic/Unit	Remarks
1	Nature of Social Philosophy	Explain
2	Nature of Social Philosophy	Explain &Provided Notes
3	Scope of Social Philosophy	Explain
4	Scope of Social Philosophy	Explain &Provided Notes
5	Concept of Individual	Explain
6	Concept of Individual	Explain &Provided Notes
7	Concept of Society	Explain &Provided Notes
8	Concept of Community	Explain &Provided Notes
9	Concept of Association	Explain &Provided Notes
10	Concept of I institution	Explain &Provided Notes
11	Theories of relation –Individual and Society	Explain
12	Theories of relation –Individual and Society	Explain
13	Theories of relation –Individual and Society	Explain &Provided Notes
14	Nature of Family	Explain
15	Kinds of Family	Explain &Provided Notes
16	Role of Family in the Society	Explain &Provided Notes
17	Social Evolution	Explain
18	Social Evolution	Explain &Provided Notes
19	Social Progress	Explain
20	Social evil	Explain
21	Nature of Political Philosophy	Explain
22	Nature of Political Philosophy	Explain
23	Scope of Political Philosophy	Explain
24	Scope of Political Philosophy	Explain &Provided Notes
25	Concept of State	Explain
26	Concept of State	Explain &Provided Notes
27	Concept of Nation	Explain
28	Concept of Liberty	Explain
29	Concept of Equality	Explain

30	Concept of Justice	Explain
31	Democracy and its forms	Explain
32	Democracy and its forms	Explain &Provided Notes
33	Gandhi's concept of Sarvodaya	Explain
34	Gandhi's concept of Sarvodaya	Explain &Provided Notes
35	Ambedkar's concept annihilation of Caste	Explain
36	Ambedkar's concept annihilation of Caste	Explain &Provided Notes
37	Marxist concept of Class	Explain
38	Marxist concept of Class	Explain
39	Marxist concept of Class	Explain &Provided Notes
40		

COURSE PLAN (2022-23)

DIGBOI COLLEGE, DIGBOI

Name of the teacher- Dr. Reepa Sarmah

Course- Honours / Generic- Honours

Class/semester – 6 th semester

Name of the Paper – Applied Ethics (DSE-4)

Units Assigned – Full (4 units)

Marks Assigned – 80

Class	Topic/Unit	Remarks
1	Nature of Ethics	Explain
2	Nature of Ethics	Explain &Provided Notes
3	Scope of Ethics	Explain
4	Scope of Ethics	Explain &Provided Notes
5	Utility of Ethics	Explain
6	Utility of Ethics	Explain &Provided Notes
7	Moral and Non –moral Actions	Explain
8	Moral and Non –moral Actions	Explain &Provided Notes
9	Value of Human Life	Explain
10	Value of Human Life	Explain
11	Value of Human Life	Explain &Provided Notes
12	Suicide	Explain
13	Suicide	Explain &Provided Notes
14	Female Foeticide	Explain
15	Female Foeticide	Explain &Provided Notes
16	Capital Punishment	Explain
17	Capital Punishment	Explain
18	Capital Punishment	Explain &Provided Notes
19	Nature as Means or ends	Explain
20	Nature as Means or ends	Explain
21	Nature as Means or ends	Explain &Provided Notes
22	Importance of Environmental Ethics	Explain
23	Importance of Environmental Ethics	Explain &Provided Notes
24	Professional Ethics	Explain
25	Professional Ethics	Explain
26	Professional Ethics	Explain &Provided Notes
27	Medical Ethics	Explain
28	Medical Ethics	Explain
29	Medical Ethics	Explain &Provided Notes

30	Euthanasia	Explain
31	Euthanasia	Explain
32	Euthanasia	Explain &Provided Notes
33	Abortion	Explain
34	Abortion	Explain &Provided Notes
35	Doctor –Patient Relation	Explain
36	Doctor –Patient Relatio	Explain &Provided Notes
37	Media Ethics	Explain
38	Media Ethics	Explain
39	Media Ethics	Explain &Provided Notes
40	Privacy	Explain
41	Privacy	Explain &Provided Notes
42	Problem of Yellow Journalism	
43	Problem of Yellow Journalism	Expla Explain in
44	Problem of Yellow Journalism	Explain
45	Problem of Yellow Journalism	Explain &Provided Notes

COURSE PLAN (2022-23)

DIGBOI COLLEGE, DIGBOI

Name of the teacher- Dr. Reepa Sarmah

Course- Honours / Generic- Honours

Class/semester – 6 th semester

Name of the Paper –Psychology

Units Assigned – Full (2 units)

Marks Assigned – 40

Class	Topic/Unit	Remarks
1	Memory	Explain
2	Memory	Explain & provided notes
3	Forgetting	Explain
4	Forgetting	Explain & provided notes
5	Immagination	Explain
6	Immagination	Explain & provided notes
7	Feeeling	Explain
8	Feeeling	Explain & provided notes
9	Emotion	Explain
10	Emotion	Explain & provided notes
11	Gestalt theory of Learning	Explain &Provided Notes
12	Gestalt theory of Learning	Explain &Provided Notes
13	Thorndike's theory of Learning	Explain
14	Thorndike's theory of Learning	Explain &Provided Notes
15	Personality	Explain
16	Personality Traits	Explain
17	Personality Traits	Explain &Provided Notes
18	Kinds of Personality	Explain
19	Kinds of Personality	Explain &Provided Notes
20	Factors in Personality	Explain
21	Factors in Personality	Explain &Provided Notes
22	Nature and Testing of I.Q.	Explain
23	Nature and Testing of I.Q.	Explain
24	Nature and Testing of I.Q.	Explain
25	Nature of Motivation	Explain
26	Nature of Motivation	Explain &Provided Notes
27	Types of Motivation	Explain
28	Types of Motivation	Explain
29	Types of Motivation	Explain &Provided Notes

DIGBOI COLLEGE, DIGBOI

Session: (Jan- June, 2023) EVEN SEMESTERS

Name of the Teacher- Sanjoy Das

Class/Semester- 2nd Semester

Course 4: British Poetry and Drama: 14th to 17th Centuries

Unit's Assigned-Unit IV (Shakespeare's Comedy)

Marks Assigned- 20

Class	Topic/ Unit	Remarks
1.	Life and background information of Shakespeare	Introduction
2.	Shakespearean comedy: characteristics	Analysis & interpretation
3.	'Twelfth Night' play started	Analysis & interpretation
4.	Contd…	Analysis & interpretation
5.	Contd…	Analysis & interpretation
6.	Contd…	Analysis & interpretation
7.	Contd…	Analysis & interpretation
8.	Contd…	Analysis & interpretation
9.	Contd…	Analysis & interpretation
10.	Contd…	Analysis & interpretation
11.	Contd…	Analysis & interpretation
12.	Contd…	Discussion & interaction
13	Various important ideas are discussed	Discussion & interaction
14	Probable questions are addressed	Discussion & interaction
15	Art of characterization and character portrayal discussed	Discussion & interaction
16	Contd…	Discussion & interaction

DIGBOI COLLEGE, DIGBOI

Session: (Jan- June, 2023)

Name of the Teacher- Sanjoy Das

Class/Semester- 4th Semester

Course 10: British Literature: 19th century

Unit's Assigned-Units II (Mid nineteenth-century novel) & IV (Victorian Poetry)

Marks Assigned- 40

Class	Topic/ Unit	Remarks
1.	Life and background information of Charlotte Bronte	Introduction
2.	19th century novel characteristics discussed	Interpretation
3.	Jane Eyre started	Analysis & interpretation
4.	Contd…	Analysis & interpretation
5.	Contd…	Analysis & interpretation
6.	Contd…	Analysis & interpretation
7.	Contd…	Analysis & interpretation
8.	Contd…	Analysis & interpretation
9.	Contd…	Analysis & interpretation
10.	Contd…	Analysis & interpretation
11.	Contd…	Analysis & interpretation
12.	Contd…	Discussion & interaction
13	Various important ideas are discussed	Discussion & interaction
14	Probable questions are addressed	Discussion & interaction
15	Art of characterization and character portrayal discussed	Discussion & interaction
16	Contd…	Discussion & interaction
17	Unit IV- Victorian poetry – features discussed	Analysis & interpretation
18	Alfred Tennyson's The Lady of Shalott taken	Analysis & interpretation
19	Contd…	Analysis & interpretation

20	Critical analysis of the poem	Analysis & interpretation
21	Ulysses taken	Analysis & interpretation
22	Contd…	Analysis & interpretation
23	Contd…	Analysis & interpretation
24	Critical appreciation of the poem, literary devices	Discussion & interpretation
25	The Defence of Lucknow taken	Analysis & interpretation
26	Contd…	Analysis & interpretation
27	Explanation of the poem in detail	Analysis & interpretation
28	Various important ideas are explicated	Analysis & interpretation
29	Robert Browning's My Last Duchess taken	Analysis & interpretation
30	Contd…	Analysis & interpretation
31	Contd…	Analysis & interpretation
32	Critical appreciation of the poem	Analysis & interpretation
33	Fra Lippo Lippi poem taken	Analysis & interpretation
34	Contd…	Analysis & interpretation
35	Contd…	Analysis & interpretation
36	Important ideas are further explicated	Discussion & interpretation
37	Poetic devices elaborated	Discussion & interpretation
38	Christina Rossetti's The Goblin Market taken	Analysis & interpretation
39	Contd…	Analysis & interpretation
40	Contd…	Analysis & interpretation

DIGBOI COLLEGE, DIGBOI

Session: (Jan- June, 2023)

Name of the Teacher- Sanjoy Das

Class/Semester- 6th Semester

Course 13: Modern European Drama

Unit's Assigned-Units II (Epic Theatre)

Marks Assigned- 20

Class	Topic/ Unit	Remarks
1.	Epic theatre described	Introduction
2.	Characteristics and other features explained	Interpretation
3.	Bertolt Brecht- The Good Woman of Szechuan taken	Analysis & interpretation
4.	Contd…	Analysis & interpretation
5.	Contd…	Analysis & interpretation
6.	Contd…	Analysis & interpretation
7.	Contd…	Analysis & interpretation
8.	Contd…	Analysis & interpretation
9.	Contd…	Analysis & interpretation
10.	Contd…	Analysis & interpretation
11.	Contd…	Analysis & interpretation
12.	Contd…	Discussion & interaction
13	Contd…	Discussion & interaction
14	Contd…	Discussion & interaction
15	Art of characterization and character portrayal discussed	Discussion & interaction
16	Probable questions discussed	Discussion & interaction

DIGBOI COLLEGE, DIGBOI

Session: (Jan- June, 2023)

Name of the Teacher- Sanjoy Das

Class/Semester- 6th Semester

Course 14: Post-colonial Literatures

Unit's Assigned-Units II (Latin American Novel) & IV (Poetry)

Marks Assigned- 40

Class	Topic/ Unit	Remarks
1.	Latin American novel described	Introduction
2.	Characteristics and other features discussed	Interpretation
3.	Gabriel Garcia Marquez's Chronicle of a Death Fortold started	Analysis & interpretation
4.	Contd…	Analysis & interpretation
5.	Contd…	Analysis & interpretation
6.	Contd…	Analysis & interpretation
7.	Contd…	Analysis & interpretation
8.	Contd…	Analysis & interpretation
9.	Contd…	Analysis & interpretation
10.	Contd…	Analysis & interpretation
11.	Contd…	Analysis & interpretation
12.	Contd…	Discussion & interaction
13	Contd…	Discussion & interaction
14	Contd…	Discussion & interaction
15	Art of characterization and character portrayal discussed	Discussion & interaction
16	Probable questions discussed	Discussion & interaction
17	Unit IV Poetry Pablo Neruda- Tonight I can write taken	Analysis & interpretation
18	Contd…	Analysis & interpretation
19	Thematic concerns discussed	Analysis & interpretation

20	The Way Spain Was taken	Analysis & interpretation
21	Contd…	Analysis & interpretation
22	Critical analysis done	Analysis & interpretation
23	Derek Walcott's 'A Far Cry from Africa' taken	Analysis & interpretation
24	Contd…	Analysis & interpretation
25	Contd…	Analysis & interpretation
26	Names poem taken	Analysis & interpretation
27	Contd…	Analysis & interpretation
28	Critical analysis done	Discussion & interpretation
29	Mamang Dai's 'Small Towns and the River' taken	Analysis & interpretation
30	Contd…	Analysis & interpretation
31	Critical appreciation of the poem	Analysis & interpretation
32	The Voice of the Mountain taken	Analysis & interpretation
33	Contd…	Analysis & interpretation
34	Themes and other issues are discussed	Discussion & interpretation

COURSE PLAN FOR MAJOR COURSE (CBCS)
SESSION JAN, 2023-JUN, 2023
EVEN SEMESTER

Name of the Teacher:- Simanta Bordoloi
Department of Assamese
Digboi College, Digboi

Class: BA 2nd Semester
Name of the paper: Poetics
Paper Code: C4
Unit Assignes: Unit-2 (Classicism, Mysticism, Romanticsm, Realism, Modernism)
Marks Assign: 16

Class	Topic/Unit	Remarks
1	Deinition of Classicism and its evolution	
2	characteristcs of Classicism	
3	differenes between Classicism neoclassicism and Romanticism	
4	Definition of Mysticism	
5	Characteristics of Mysticism	
6	Romanicism and its evolution	
7	Characteristics of Romanticism	
8	Definition of Realism and its evvolution	
9	Characteristics of realsm	
10	Modernsm: its evolution	
11	Characteristics of modernism	
12	Revision	
13	Revision	
14	Revision	

Class: BA 4th Semester
Name of the paper: Selection from Assamese Prose
Paper Code: C 10
Unit Assignes: Unit-2 (Old Assamese Prose: Katha Gita, Tunkhungia Buranji, Guru Charit Katha – slected Prose)
Marks Assign: 14

Class	Topic/Unit	Remarks
1	Bhattadevor Chamu Paricoy	
2	Geetar chamu paricoy	
3	Katha Geetar tattik dish	
4	Bhattadevor Gadyar Boishistya	
5	Buranji Sahityar Uttpatti aru Bikash	
6	Buranjir Gadya	
7	Tunkhungia Buranjir Bishoybastur alochona	
8	Charity Sahityar Utpatti are Bikash	
9	Charit puthir Gadya	
10	Nirbachito pathyanshor aluchona	
11	Revision	
12	Revision	
13	Revision	
14	Revision	

Class: BA 4th Semester
Name of the paper: Selection from Assamese Prose
Paper Code: C 10
Unit Assignes: Unit-3 (Orunudoy jugar Asomiya Gadya:Nirbachita Path – Jatrikar Jatra, Asomiya lorar Mitra,)
Marks Assign: 14

Class	Topic/Unit	Remarks
1	Arunodoy jugar patabhumi	
2	Arunudoy just bhasha are gadya	
2	Jatrikar Jatrar alochona	
3	Anandaram Chemical Phukanar Chamu Parichoy	
4	Asomiya lorar mitrar alochana	
5	Arunudoy jugar sahityar Baishistya	
6	Arunudoy starar gadyariti	
7	Missionary gadyar Baishistya	
8	Revision	
9	Revision	
10	Revision	
11	Revision	
12	Revision	

Class: BA 4th Semester
Name of the paper: Selection from Assamese Prose
Paper Code: C 10
Unit Assignes: Unit-4 (Jonaki jugar Gadya:Nirbachita Path – Bahire rongchong Bhitore Kuabhaturi, Dhanar Byabohar, Jatiya Choitanya, Satawan Sal)
Marks Assign: 14

Class	Topic/Unit	Remarks
1	Jonaki jugar patabhumi	
2	Hemchandra Baruar Sahitya kriti	
3	Hemchandra Baruar Gadyariti	
4	Bahire rongchong bhitore kuabhaturir alochana	
5	Satyanath Borar chamu porichoy	
5	Satyanath Borar gadyariti	
6	Dhanar byboharr aluchona	
7	Banikanta Kakatir parichoy	
8	Banikanta Kakatir Gadyarti	
9	Jatiya Choitanya: eti Alochana	
10	Benudhar Rajkhuar chamu porichoy	
11	Satawan Saal: Eti Alochona	
12	BenudarRajkhuwar Gadyariti	
13	Jonakir Gadyar Boishistya	
14	Revision	
15	Revision	
16	Revision	
17	Revision	

Class: B.A. 6th Semester
Name of the paper: Selection from Assamese Prose
Paper Code: C - 13
Unit Assignes: Unit-1 (Assamese Short Story)
Marks Assign: 16

Class	Topic/Unit	Remarks
1	Asomiya Chutigalpar chamu parichoy	
2	Purabi Bormudoi galpar Boishistya	
3	Burhi Air Sadhu galpar Alochana	
4	Lakshminandan Borar Galpa	
5	Sokha Damodar Galpar Alochana	
7	Saurav Kumar Chalihar Galpa	
8	Ehat Daba Galpar Alochana	
9	Kula Saikiar Galpa	
10	Duwar GAlpar Alochana	
11	Revision	
12	Revision	
13	Revision	
14	Revision	

Class: B.A. 6th Semester
Name of the paper: Selection from Assamese Prose
Paper Code: C - 13
Unit Assignes: Unit-3 (Asomiya Jiboni aru atma jiboni)
Marks Assign: 16

Class	Topic/Unit	Remarks
1	Asomiya Jiboni Sahityar parochoy	
2	Jiboni aru Atmajibonir parthakya	
3	Gunabhiram Baruar chamu parichoy	
4	Ananda Ram Dhekiyal Phukanar Jibon Charitrar Alochana	
5	Lakshminath Bezbaruarr Parichoy	
6	Mur Jibon Sowaran: Alochana	
7	Indira Miri: Jibon Aru Sahitya Karma	
8	Nefar Bichitra Abhigyata: Alochana	
9	Revision	
10	Revision	
11	Revision	
12	Revision	

Class: B.A. 6th Semester
Name of the paper: Selection from Assamese Prose
Paper Code: C - 13
Unit Assignes: Unit-4 (Assamese bhraman kahini)
Marks Assign: 12

Class	Topic/Unit	Remarks
1	Hem Baruah: Jibon Aru Sahitya	
2	Asomiya Bhraman sahityar chamu Parichoy	
3	Bhraman Sahityar Boishistya	
4	Israil GranthaKhanar Somaluchana	
5	Do	
6	Do	
7	Revision	
8	Revision	
9	Revision	
10	Revision	

Class: B.A. 6th Semester
Name of the paper: Selection from Assamese Prose
Paper Code: C - 13
Unit Assignes: Unit-5 (Asomiya byaktigata rosona aru bigyan sahitya)
Marks Assign: 16

Class	Topic/Unit	Remarks
1	Homen Borgohainr gadya	
2	Jibonor joygaan: Alochana	
3	do	
4	do	
5	Dinesh Chandra Goswamir Gadya	
6	Gor Basuar babe Electronic byobastha: Alochana	
7	do	
8	do	
9	Revision	
10	Revision	
11	Revision	
12	Revision	

DIGBOI COLLEGE, DIGBOI

COURSE PLAN

Name of Teacher: Bisti Ram Narzary

Course : Honours/Generic – Honours

Class/Semester : 2nd Semester (H)

Paper Code : C 3, Name of the paper—Ancient Greek Philosophy

Unit Assigned : Full Paper

Marks Assigned : 80

Class	Topic/Unit	Remarks
1	Pre- Socratic Philosophy	Explanations & notes
2	Thales: First Principle	Explanations & Notes
3	Pythagoras: Number theory	Explanations & Notes
4	Democritus: Atomism	Explanations & Notes
5	Heraclitus: Doctrine of Flux and Logos	Explanations & Notes
6	Parmenides: Nature of Being	Explanations & Notes
7	Sophist: Protagoras (Man is the measure of all things)	Explanations & Notes
8	Socrates: Virtue is Knowledge	Explanations & Notes
9	Plato's theory of Knowledge	Explanations & Notes
10	Plato's theory of Ideas	Explanations
11	Plato's theory of the Immortality of the Soul	Explanations & Notes
12	Aristotle's Concept of Cause	Explanations & Notes
13	Form and Matter- Aristotle	Explanations
14	Aristotle's criticism of Plato's theory of Ideas	Explanations & Notes

DIGBOI COLLEGE, DIGBOI
COURSE PLAN

Name of Teacher: Bisti Ram Narzary
Course : Honours/Generic – Honours
Class/Semester :4th Semester (H)
Paper Code : C10, Name of the paper—PHILOSOPHY OF RELIGION
Unit Assigned : Full Paper
Marks Assigned : 80

Class	Topic/Unit	Remarks
1	Nature of the Philosophy of Religion	Explanations
2	Scope of the Philosophy of Religion	Notes
3	Religion and Science	Explanations & Notes
4	Religious Faith	Explanations & Notes
5	religious Belief and Reason	Explanations & Notes
6	Mysticism	Explanations & Notes
7	Nature of Religious Consciousness	Explanations & Notes
8	Elements of Religious Consciousness	Explanations & Notes
9	Anthropological theory of the origin of Religion	Explanations & Notes
10	Psychological theories of the origin of Religion	Explanations & Notes
11	Devine Determinism	Explanations & Notes
12	Human Freedom	Explanations & Notes
13	Proofs for the existence of God--	Explanations & Notes
14	Cosmological Argument	Explanations & Notes
15	Ontological Argument	Explanations & Notes
16	Teleological Argument	Explanations & Notes
17	Moral Argument	Explanations & Notes
18	Problem of Evil	Explanations & Notes
19	Metaphysical arguments of the Immortality of Soul	Explanations & Notes
20	Religious Arguments of the Immortality of Soul	Explanations & Notes
21	Anti theistic Trends:----	Explanations & Notes
22	Positivism	Explanations & Notes
23	Materialism	Explanations & Notes
24	Marxism	Explanations & Notes

DIGBOI COLLEGE, DIGBOI
COURSE PLAN

Name of Teacher: Bisti Ram Narzary
Course : Honours/Generic – Honours
Class/Semester : 4th Semester (Generic)
Paper Code : GE4, Name of the paper—Applied Ethics
Unit Assigned : Unit-IV & II
Marks Assigned : 25

Class	Topic/Unit	Remarks
1	Introduction to Professional Ethics	Explanations
2	Medical Ethics	Explanations& Notes
3	Euthanasia	Explanations & Notes
4	Abortion	Explanations & Notes
5	Doctor-Patient Relation	Explanations & Notes
6	Media Ethics: Privacy	Explanations & Notes
7	Problem of Yellow Journalism	Explanations & Notes
8	Ethical issues in Cyber Space	Explanations & Notes
9	Capital Punishment	Explanations & Notes

DIGBOI COLLEGE, DIGBOI
COURSE PLAN

Name of Teacher: Bisti Ram Narzary
Course : Honours/Generic – Honours
Class/Semester : 6th Semester (H)
Paper Code : C13, Name of the paper—Comparative Religion
Unit Assigned : Full Paper
Marks Assigned : 80

Class	Topic/Unit	Remarks
1	Nature of Comparative Religion	Explanations
2	Objective of Comparative Religion	Notes
3	Values of Comparative Religion	Explanations & Notes
4	Acquaintance with Hinduism	Explanations & Notes
5	Buddhism	Explanations & Notes
6	Jainism	Explanations & Notes
7	Christianity	Explanations & Notes
8	Islam	Explanations & Notes
9	Jainism	Explanations & Notes
10	Sikhism	Explanations & Notes
11	Zoroastrianism	Explanations & Notes
12	Principal sects of Hinduism; Saivism	Explanations & Notes
13	Saktism	Explanations & Notes
14	Vaisnavism	Explanations & Notes
15	Neo-Vaisnavism of Snkardeva and Madhabdeva	Explanations & Notes
16	Judaism, Christianity and Islam (Comparison on the basis of God, World, Self and Human Ddestiny)	Explanations & Notes
17	Secularism	Explanations & Notes
18	Religious understanding	Explanations & Notes
19	Fanaticism	Explanations & Notes
20	Possibility of Universal Religionn	Explanations & Notes

DIGBOI COLLEGE, DIGBOI
COURSE PLAN

Name of Teacher: Bisti Ram Narzary
Course : Honours/Generic – Honours
Class/Semester : 6th Semester (H)
Paper Code : DSE3, Name of the paper—Psychology
Unit Assigned : Unit-I & IV
Marks Assigned : 28

Class	Topic/Unit	Remarks
1	Definition of psychology	Explanations
2	Nature of psychology	Notes
3	Methods of psychology	Explanations & Notes
4	Schools of psychology	Explanations & Notes
5	Schools of psychology	Explanations & Notes
6	Applied psychology	Explanations & Notes
7	Nature of motivation	Explanations & Notes
8	Type of motivation	Explanation

DIGBOI COLLEGE, DIGBOI

Course Plan January,2023

Name of the Teacher-Dr. Anamika Neog

Course –Honours / Generic – HISGE2

Class/Semester- II

Name of the Paper- History of India From the earliest times to 1526

Units Assigned- Unit III (3.04) – Unit V

Marks Assigned- 40

Class	Topic/ Unit	Remarks
1.	Gupta Age- Political history	Text Books:
2.	Gupta Age- society,economy and culture	English: Thapar, Romila- Early India Chandra, S- History of Medieval India Singh, Upindar- A History of Ancient and Early Medieval India
3.	Post-Gupta period(upto 640 A.D.)- polity, society,economy and culture	Assamese: Barua, P.K.- Bharat Buranji Nath, D.- Bharatar Rajnoitik aru Sanskritik Buranji(Revised)
4.	Political developments in the South- the Pallavas	
5.	The Imperial Cholas	
6.	The Rashtrakutas	
7.	The Chalukyas	
8.	The Arabs in Indian politics	

9.	The Turks in Indian politics- Ghaznivides	
10.	The Ghorid invasions	
11.	Indian Society during 650-1200 A.D.-literature & language, temple architecture and sculpture	
12.	The Delhi Sultanate- the Slave dynasty	
13.	The Khaljis- Alauddin Khalji's administration	
14.	The Tughluqs dynasty	
15.	Disintegration of the Delhi Sultanate and rise of Provincial Kingdoms	
16.	Vijayanagar Kingdom	
17.	Bahmani Kingdom	
18.	Polity, society of the Sultanate period	
19.	Economy,religion and culture of the Sultanate period,	
20.	Bhakti Movement and Sufism	

DIGBOI COLLEGE, DIGBOI

Course Plan , January, 2023

Name of the Teacher- Dr. Anamika Neog

Course –Honours / Generic – HISGE 4.1

Class/Semester- IV

Name of the Paper-History of Modern Assam

Units Assigned- Unit III (3.04) – Unit V

Marks Assigned- 40

Class	Topic/ Unit	Remarks
1.	Growth of national consciousness	Text Books:
2.	Assam association	English: Baruah, S.L. –A Comprehensive History of Assam Barpujari,H.K.-(ed) The Comprehensive History of Assam,Vol.IV&V
3.	Sarbajanik sabhas	Assamese: Nath,D. – Asam Buranji, Revised and enlarged edition
4.	Rayat sabhas.	
5.	Impact of Partition of Bengal in Assam.	
6.	Impact of Swadeshi Movement in Assam	
7.	Government of India Act, 1919	
8.	Dyarchy on Trial in Assam	
9.	Non-Co-operation Movement in Assam	
10.	Swarajist Politics in Assam	
11.	The Civil Disobedience Movement	
12.	Student Movement in Assam	
13.	Trade Union and Allied Movements	
14	Tribal League and Politics in Assam.	
15.	Migration	
16.	Line System and its Impact on Politics in Assam	
17.	Quit India Movement in Assam	
18.	Cabinet Mission plan and the Grouping Controversy.	
20.	The Sylhet Referendum	

DIGBOI COLLEGE, DIGBOI

Course Plan January, 2023

Name of the Teacher- Partha Kr Narah
Course –Honours / Generic – HISGE2
Class/Semester- II
Name of the Paper- History of India From the earliest times to 1526 AD.
Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Sources –A survey. Archaeological sources.	Text Books: English: Thapar, Romila- Early India Chandra, S- History of Medieval India Singh, Upindar- A History of Ancient and Early Medieval India
2.	Literary sources	
3	Foreign accounts	
4	Harappan Civilization.Origin and extent	
5	Salient features, of Harrapans	
6	Town planning.	
7	Socials and economic condition s of Harrapans	
8	Religions and decline and the end of Civilization.	
9	Vedic Civilization society, economy, polity and culture of the Rig-Vedic	
10	Later Vedic periods	
11	Raise of the Territorial States –Mahajanapadas.Ascedancy of Magadha	
12	Alexander s invasion of India	
13	Rise of the Mauryan Empire under Asoka-his inscription	
14	Dhamma ofAsoka.	
15	Mauryan system of Administration.	
16	Political developments in the Post-Mauryan The period (200BC-3000BC) The Sungas	
17	The Satavahanas	
18	The Khushanas.	
19	Sangam literature	

DIGBOI COLLEGE, DIGBOI

Course Plan, January, 2023

Name of the Teacher-Partha K Narah

Course –Honours / Generic – HISGE 4

Class/Semester- IV

Name of the Paper-History of Modern Assam

Marks Assigned- 80

Class	Topic/ Unit	Remarks
1.	Political Condition in Assam on the Eve of the British rule.	Text Books:
2.	Establishment and Consolidation of the British rule – Reforms and Reorganizations David Scott Measures.	English: Baruah, S.L. –A Comprehensive History of Assam Barpujari,H.K.-(ed) The Comprehensive History of Assam,Vol.IV&V
3.	David Scott, Administrative Reforms	
4.	David Scott, Revenue and judicial Reforms.	
5.	Robertson's–Administrative Reorganization and Revenue Measures	
6.	Francis Jenkins	
7.	Annexation of Lower Assam, Administrative Reorganization and Revenue Measuress.	
8.	Early phase of Revolts and Resistance to British	
9.	Gomdhar Konwar, Piyali Phukan,	
10	Restoration of Purondar Singha and Treaty of 1833.	
11	U.Tirut Singh .The Khamti and the Singpho Rebellion	
12	Annexation of Cachar	
13	The 1857 Revolt in Assam and its Aftermath	
14	Maniram Dewan	
15	Establishment of Chief commissionership of Assam	
16	Land Revenue Measures and Peasant Uprisings in 19th century Assam	
17	Peasant Uprisings of Lower Assam	
18	Patharughat Uprising	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –2nd Semester **(CBCS)**

Name of the Paper - **LSC202: TOXICOLOGY, PEST MANAGEMENT, BIOETHICS & IPR**

Units Assigned – Unit 4

Marks Assigned – 10 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 4:** Bioethics and IKS: Historical perspectives of bioethics	
2.	**Unit 4:** Bioethics and IKS: Conflicting issues (GMO, GMP, Cloning, Environmental hazards)	
3.	**Unit 4:** Bioethics and IKS: Conflicting issues (GMO, GMP, Cloning, Environmental hazards)	
4.	**Unit 4:** Bioethics and IKS: Principles and guidelines for research in animals and human	
5.	**Unit 4:** Bioethics and IKS: Intellectual Property Rights and their types	
6.	**Unit 4:** Bioethics and IKS: Indigenous knowledge system, biopiracy.	
7.	**Unit 4:** Bioethics and IKS: Indigenous knowledge system, biopiracy.	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –2nd Semester **(CBCS)**

Name of the Paper - **LSC203: TAXONOMY, EVOLUTION & BIODIVERSITY**

Units Assigned –Unit 4

Marks Assigned – 05 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 4:** Phylogenetic tree: reading and using, the tree of life.	
2.	**Unit 4:** Phylogenetic tree: reading and using, the tree of life.	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Kishor Haloi**

Course – M.Sc in Life Sciences

Class/Semester –2nd Semester **(CBCS)**

Name of the Paper - **LSD206: A. BIOCHEMISTRY –II (PROTEIN CHEMISTRY & ENZYMOLOGY)**

Units Assigned –Unit 3 & 4

Marks Assigned – 20 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 3:** Enzymes: Energetics of enzyme catalyzed reaction single and bisubstrate reactions	
2.	**Unit 3:** Enzymes: mechanism of action	
3.	**Unit 3:** Enzymes: Allosteric enzymes	
4.	**Unit 3:** Enzymes: Enzyme induction and inhibition (competitive, non-competitive and uncompetitive)	
5.	**Unit 3:** Enzymes: Enzyme induction and inhibition (competitive, non-competitive and uncompetitive)	
6.	**Unit 3:** Enzymes: Enzyme induction and inhibition (competitive, non-competitive and uncompetitive)	
7.	**Unit 3:** Enzymes: Purification of Enzyme	
8.	**Unit 4:** Enzyme kinetics; Michalis-Menten plot	
9.	**Unit 4:** Line weaver Bulk plot, Hill plot	
10.	**Unit 4:** Regulation of enzyme activity	
11.	**Unit 4:** Restriction enzymes, RNA as an enzyme	
12.	**Unit 4:** Isoenzyme and their significance. Regulation of metabolism by enzyme.	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Moni Kankana Kalita**

Course – M.Sc in Life Sciences

Class/Semester –2nd Semester **(CBCS)**

Name of the Paper - **LSC202: TOXICOLOGY, PEST MANAGEMENT, BIOETHICS & IPR**

Units Assigned – Unit 5, Unit 6

Marks Assigned – 10 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 5:** Agreement and treaties : GATT & TRIPs Agreement, Madrid Agreement, Hague Agreement, WIPO Treaties	
2.	**Unit 5:** Indian Patent Act 1970 and recent amendment. Patent cooperation treaty, Patent filing procedure.	
3.	**Unit 5:** Patent cooperation treaty, Patent filing procedure.	
4.	**Unit-6:** Overview of Intellectual Property Rights: Introduction and need of IPR	
5.	**Unit-6:** IPR in India and abroad. Role of IPR in modern Biotechnological research	
6.	**Unit-6:** Patents, Copyright, Trademarks and Geographical Indications. Process of patenting.	
7.	**Unit-6:** Patents, Copyright, Trademarks and Geographical Indications. Process of patenting.	

DIGBOI COLLEGE, DIGBOI

Course Plan, 2022

Name of the Teacher- **Dr. Moni Kankana Kalita**

Course – M.Sc in Life Sciences

Class/Semester –2nd Semester **(CBCS)**

Name of the Paper - **LSC203: TAXONOMY, EVOLUTION & BIODIVERSITY**

Units Assigned –Unit 4

Marks Assigned – 05 out of 60

Class	Topic/ Unit	Remarks
1.	**Unit 4:** Modern evolutionary synthesis; Origin of basic biological molecules	
2.	**Unit 4:** Concept of neutral evolution and molecular clocks	
3.	**Unit 4:** Chemical evolution – origin of life in the light of chemical evolution. Adaptive radiation.	
4.	**Unit 4:** Chemical evolution – origin of life in the light of chemical evolution. Adaptive radiation.	

DIGBOI COLLEGE, DIGBOI

Course Plan : 2022-2023

Name of the Teacher- Aparajita Gogoi

Course –M. Sc

Class/Semester- 2nd Semester (CBCS)

Name of the Paper-LSC 203 – Taxonomy, Evolution and Biodiversity

Units Assigned-Unit 5 & 6

Marks Assigned- 8 /45

Class	Topic/ Unit	Remarks
1.	**Unit 5** : Biodiversity-types, species, genetic and molecular diversity	
2.	Biodiversity hotspots in India and global mega diversity regions	
3.	**Unit 6**: Biogeographical realms of the world, geographic origins of species	
4.	Geographic distribution of species, Biogeographical Zones of India	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – Honours

Class/Semester –2nd Semester **(CBCS)**

Name of the Paper - **CCIII – Non-chordates II: Coelomates**

Units Assigned – Unit 1, Unit 2 and Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit -1 Introduction To Coelomates- Evolution of Coelom and Metamerism.	
2.	Unit -1 Introduction To Coelomates- Evolution of Coelom and Metamerism.	
3.	Unit- 2 General Characteristics And Classification up To Classes	
4.	Unit- 2 General Characteristics And Classification up To Classes	
5.	Unit – 2: Excretion In Annelida	
6.	Unit 4: Onychophora General Characteristics and Evolutionary Significance	
7.	Unit 4: Onychophora General Characteristics and Evolutionary Significance	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – Honours

Class/Semester –2nd Semester **(CBCS)**

Name of the Paper - **CCIV –: Cell Biology**

Units Assigned –Unit 4 and Unit 5

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit -4: Mitochondria And Peroxisomes: Mitochondria Structure,	
2.	Unit -4: Mitochondria And Peroxisomes: Semi-Autonomous Nature, Endosymbiotic Hypothesis,	
3.	Unit -4: Mitochondria And Peroxisomes: Semi-Autonomous Nature, Endosymbiotic Hypothesis,	
4.	Unit -4: Mitochondria And Peroxisomes: Mitochondrial Respiratory Chain,	
5.	Unit -4: Mitochondria And Peroxisomes: Mitochondrial Respiratory Chain,	
6.	Unit -4: Mitochondria And Peroxisomes: Chemi-Osmotic Hypothesis,	
7.	Unit -4: Mitochondria And Peroxisomes: Peroxisomes.	
8.	Unit -4: Mitochondria And Peroxisomes: Peroxisomes.	
9.	Unit –5: Cytoskeleton-Structure And Functions: Microtubules,	
10.	Unit –5: Cytoskeleton-Structure And Functions: Microfilaments And Intermediate Filaments.	
11.	Unit –5: Cytoskeleton-Structure And Functions: Intermediate Filaments.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – Generic

Class/Semester –2nd Semester **(CBCS)**

Name of the Paper - **CCII-GE- Viii Insect Vectors and Diseases**

Units Assigned –Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit IV: Dipteran as Disease Vectors:,	
2.	Unit IV: Dipterans as important insect vectors – Mosquitoes	
3.	Unit IV: Dipterans as important insect vectors –Sand fly,	
4.	Unit IV: Dipterans as important insect vectors – Houseflies;	
5.	Unit IV: Study of mosquito-borne diseases – Malaria	
6.	Unit IV: Study of mosquito-borne diseases –Dengue, Chikungunya, Viral	
7.	Unit IV:Study of mosquito-borne diseases –Dengue, Chikungunya, Viral encephalitis,	
8.	Unit IV: Control of mosquitoes.	
9.	Unit IV: Study of sand fly-borne diseases – Visceral Leishmaniasis, Cutaneous Leishmaniasis, Phlebotomus fever; Control of Sand fly.	
10.	Unit IV: Study of sand fly-borne diseases – Visceral Leishmaniasis, Cutaneous Leishmaniasis, Phlebotomus fever; Control of Sand fly.	
11.	Unit IV: Study of sand fly-borne diseases – Visceral Leishmaniasis, Cutaneous Leishmaniasis, Phlebotomus fever; Control of Sand fly.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- **Dr. Kishor Haloi**

Course –Honours / Generic – Honours

Class/Semester –4th Semester **(CBCS)**

Name of the Paper - **Core Course VIII: Comparative Anatomy of Vertebrate**

Units Assigned – Unit 7 and Unit 8

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 7: Nervous System Comparative account of brain	
2.	Unit 7: Nervous System Comparative account of brain	
3.	Unit 7: Autonomic nervous system	
4.	Unit 7: Autonomic nervous system	
5.	Unit 7: Spinal cord, Cranial nerves in mammals	
6.	Unit 7: Spinal cord, Cranial nerves in mammals	
7.	Unit 7: Cranial nerves in mammals	
8.	Unit 7: Cranial nerves in mammals	
9.	Unit 8: Sense Organs Classification of receptors	
10.	Unit 8: Sense Organs Classification of receptors	
11.	Unit 8: Brief account of visual receptors in man	
12.	Unit 8: Brief account of visual receptors in man	
13.	Unit 8: Brief account of auditory receptors in man	
14.	Unit 8: Brief account of auditory receptors in man	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – Honours

Class/Semester –4th Semester **(CBCS)**

Name of the Paper - **Core Course IX: Animal Physiology: Life Sustaining Systems**

Units Assigned – Unit 5

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 5: Physiology of Heart Structure of mammalian heart	
2.	Unit 5: Physiology of Heart Coronary circulation	
3.	Unit 5: Physiology of Heart Structure and working of conducting myocardial fibers	
4.	Unit 5: Physiology of Heart Structure and working of conducting myocardial fibers	
5.	Unit 5: Physiology of Heart Origin and conduction of cardiac impulses Cardiac cycle	
6.	Unit 5: Physiology of Heart Origin and conduction of cardiac impulses Cardiac cycle	
7.	Unit 5: Physiology of Heart Cardiac output and its regulation	
8.	Unit 5: Physiology of Heart Frank-Starling Law of the heart	
9.	Unit 5: Physiology of Heart nervous and chemical regulation of heart rate	
10.	Unit 5: Physiology of Heart Electrocardiogram	
11.	Unit 5: Physiology of Heart Blood pressure and its regulation	
12.	Unit 5: Physiology of Heart Blood pressure and its regulation	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Kishor Haloi

Course –Honours / Generic – Honours

Class/Semester –4th Semester **(CBCS)**

Name of the Paper – **CORE COURSE X: Biochemistry of Metabolic Processes**

Units Assigned – Unit 1 and Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 1: Overview of Metabolism Use of reducing equivalents and cofactors;	
2.	Unit 1: Overview of Metabolism basics of intermediary metabolism and overview of regulatory strategies.	
3.	Cofactors; Specificity of enzyme action; Isozymes; Mechanism of enzyme action; Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Derivation of MichaelisMenten equation, Concept of Km and Vmax, Lineweaver-Burk plot; Multisubstrate reactions; Enzyme inhibition; Allosteric enzymes and their kinetics; Regulation of enzyme action	
4.	Unit 4: Protein Metabolism Catabolism of amino acids	
5.	Unit 4: Protein Metabolism Transamination	
6.	Unit 4: Protein Metabolism Deamination	
7.	Unit 4: Protein Metabolism Urea cycle	
8.	Unit 4: Protein Metabolism Urea cycle	
9.	Unit 4: Protein Metabolism Fate of C-skeleton of Glucogenic and Ketogenic amino acids.	
10.	Unit 4: Protein Metabolism Fate of C-skeleton of Glucogenic and Ketogenic amino acids.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Kishor Haloi

Course –Honours / Generic – **Generic**

Class/Semester –4th Semester **(CBCS)**

Name of the Paper – **GE IV: ENVIRONMENT AND PUBLIC HEALTH**

Units Assigned – Unit 1 and Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	UNIT I: Introduction: Sources of Environmental hazards, hazard identification and accounting.	
2.	UNIT I: Introduction: Sources of Environmental hazards, hazard identification and accounting	
3.	UNIT I: Introduction: Fate of toxic and persistent substances in the environment	
4.	UNIT I: Introduction: Dose Response Evaluation	
5.	UNIT I: Introduction: Exposure Assessment	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Kishor Haloi
Course –Honours / Generic – **Honours**
Class/Semester –6th Semester **(CBCS)**
Name of the Paper – **C 13: Developmental Biology**
Units Assigned –Unit 2
Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 2: Early Embryonic Development	
2.	Unit 2: Gametogenesis, Spermatogenesis, Oogenesis	
3.	Unit 2: Types of eggs;	
4.	Unit 2: Egg membranes	
5.	Unit 2: Fertilization (External and Internal): Changes in gametes, Blocks to polyspermy;	
6.	Unit 2: Fertilization (External and Internal): Changes in gametes, Blocks to polyspermy;	
7.	Unit 2: Fertilization (External and Internal): Changes in gametes, Blocks to polyspermy;	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Kishor Haloi
Course –Honours / Generic – **Honours**
Class/Semester –6th Semester **(CBCS)**
Name of the Paper – **C 14: Evolutionary Biology**
Units Assigned –Unit 4, Unit 6 and Unit 9
Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 4: Sources of variations: Heritable variations and their role in evolution	
2.	Unit 4: Sources of variations: Heritable variations and their role in evolution	
3.	Unit 6: Product of evolution: Micro evolutionary changes (inter-population variations, clines, races, Species concept, Isolating mechanisms	
4.	Unit 6: Product of evolution: Micro evolutionary changes (inter-population variations, clines, races, Species concept, Isolating mechanisms	
5.	Unit 6: Modes of speciation—allopatric, sympatric, Adaptive radiation / macroevolution (exemplified by Galapagos finches	
6.	Unit 6: Modes of speciation—allopatric, sympatric	
7.	Unit 9: Phylogenetic trees: Multiple sequence alignment, construction of phylogenetic trees, interpretation of trees	
8.	Unit 9: Phylogenetic trees: Multiple sequence alignment, construction of phylogenetic trees, interpretation of trees	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Kishor Haloi
Course –Honours / Generic – **Honours**
Class/Semester –6th Semester **(CBCS)**
Name of the Paper – **DSE 3: Fish and Fisheries**
Units Assigned –Unit 3 and Unit 5
Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	UNIT 3: Fisheries: Inland Fisheries; Marine Fisheries.	
2.	UNIT 3: Environmental factors influencing the seasonal variations in fish catches in the Arabian Sea and the Bay of Bengal	
3.	UNIT 3: Fishing crafts and Gears	
4.	UNIT 3: Fishing crafts and Gears.	
5.	UNIT 3: Depletion of fisheries resources; Application of remote sensing and GIS in fisheries; Fisheries law and regulations.	
6.	UNIT 3: Fisheries law and regulations.	
7.	UNIT 5: Fish in research: Transgenic fish, Zebrafish as a model organism in research	
8.	UNIT 5: Fish in research: Transgenic fish, Zebrafish as a model organism in research	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Kishor Haloi
Course –Honours / Generic – **Honours**
Class/Semester –6th Semester **(CBCS)**
Name of the Paper – **DSE 4: Immunology**
Units Assigned –Unit 5 and Unit 7
Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 5: Major Histocompatibility Complex: Structure and functions of MHC molecules. Endogenous and exogenous pathways of antigen processing and presentation	
2.	Unit 5: Major Histocompatibility Complex: Structure and functions of MHC molecules. Endogenous and exogenous pathways of antigen processing and presentation	
3.	Unit 5: Major Histocompatibility Complex: Structure and functions of MHC molecules. Endogenous and exogenous pathways of antigen processing and presentation	
4.	Unit 7: Complement System: Components and pathways of complement activation.	
5.	Unit 7: Complement System: Components and pathways of complement activation.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – Honours

Class/Semester –2nd Semester **(CBCS)**

Name of the Paper **- CCIII – Non-chordates II: Coelomates**

Units Assigned – Unit 5

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit: 5 - General Characters of Mollusca	
2.	Unit: 5 - Classification of Mollusca	
3.	Unit: 5 - Classification of Mollusca	
4.	Unit: 5 - Pearl formation in Mollusca	
5.	Unit: 5 - Pearl formation in Mollusca	
6.	Unit: 5 - Respiration in Mollusca	
7.	Unit: 5 - Respiration in Mollusca	
8.	Unit: 5 - Evolutionary significance of Trocophore larva	
9.		

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – Honours

Class/Semester –2nd Semester **(CBCS)**

Name of the Paper - **CCIV – Cell Biology**

Units Assigned – Unit 1, Unit 2 and Unit 3 and Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 1: Prokayotic and Eukaryotic cells	
2.	Unit 1: Virus	
3.	Unit 1: Viroids	
4.	Unit 1: Mycoplasma	
5.	Unit 1: Prions	
6.	Unit 2: Mitosis	
7.	Unit 2: Mitosis	
8.	Unit 2: Cell Cycle and its regulation.	
9.	Unit 2: Cell Cycle and its regulation.	
10.	Unit 3: Structure & functions: Golgi Bodies	
11.	Unit 3: Structure & functions: Golgi Bodies	
12.	Unit 3: Structure & functions: Lysosomes	
13.	Unit 3: Structure & functions: Lysosomes	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Generic**

Class/Semester –**2nd Semester (CBCS)**

Name of the Paper **- CCII-GE- VIII Insect Vectors and Diseases**

Units Assigned – Unit 4 and Unit 5

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit IV: Dipteran as Disease Vectors: Study of house fly as important mechanical vector,	
2.	Unit IV: Myiasis and Control of house fly.	
3.	Unit V: Siphunculata as Disease Vectors: Human louse (Head, Body and Pubic louse) as important insect vectors;	
4.	Unit V: Siphunculata as Disease Vectors: Human louse (Head, Body and Pubic louse) as important insect vectors;	
5.	Unit V: Study of louse-borne diseases –Typhus fever	
6.	Unit V: Study of louse-borne diseases – Relapsing fever	
7.	Unit V: Study of louse-borne diseases - Trench fever	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – Honours

Class/Semester –4th Semester **(CBCS)**

Name of the Paper - **Core Course VIII: Comparative Anatomy Of Vertebrate**

Units Assigned – Unit 5 and Unit 6

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 5: Circulatory System General plan of circulation	
2.	Unit 5: Evolution of heart	
3.	Unit 5: Evolution of heart	
4.	Unit 5: Evolution of aortic arches	
5.	Unit 5: Evolution of aortic arches	
6.	Unit 6: Urinogenital System	
7.	Unit 6: Succession of kidney	
8.	Unit 6: Succession of kidney	
9.	Unit 6: Evolution of urinogenital ducts	
10.	Unit 6: Evolution of urinogenital ducts	
11.	Unit 6: Types of mammalian uteri	
12.	Unit 6: Types of mammalian uteri	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – Honours

Class/Semester –4th Semester **(CBCS)**

Name of the Paper - **Core Course IX: Animal Physiology: Life Sustaining Systems**

Units Assigned – Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 4: Blood Components of blood and their functions	
2.	Unit 4: Blood Components of blood and their functions	
3.	Unit 4: Blood Structure and functions of haemoglobin	
4.	Unit 4: Blood Haemostasis	
5.	Unit 4: Blood Blood clotting system,	
6.	Unit 4: Blood Blood clotting system,	
7.	Unit 4: Blood Kallikrein-Kinninogen system,	
8.	Unit 4: Blood Complement system & Fibrinolytic system	
9.	Unit 4: Blood Complement system& Fibrinolytic system	
10.	Unit 4: Blood Haemopoiesis	
11.	Unit 4: Blood Blood groups: Rh factor, ABO and MN.	
12.	Unit 4: Blood Blood groups: Rh factor, ABO and MN.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – Honours

Class/Semester –4th Semester **(CBCS)**

Name of the Paper – **CORE COURSE X: Biochemistry of Metabolic Processes**

Units Assigned – Unit 1 and Unit 3

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 1: Overview of Metabolism Catabolism vs Anabolism, Stages of catabolism	
2.	Unit 1: Overview of Metabolism Compartmentalization of metabolic pathways	
3.	Unit 3: Lipid Metabolism β-oxidation and omega -oxidation of saturated fatty acids with even and odd number of carbon atoms	
4.	Unit 3: Lipid Metabolism β-oxidation and omega -oxidation of saturated fatty acids with even and odd number of carbon atoms	
5.	Unit 3: Lipid Metabolism β-oxidation and omega -oxidation of saturated fatty acids with even and odd number of carbon atoms	
6.	Unit 3: Lipid Metabolism β-oxidation and omega -oxidation of saturated fatty acids with even and odd number of carbon atoms	
7.	Unit 3: Lipid Metabolism Biosynthesis of palmitic acid	
8.	Unit 3: Lipid Metabolism Biosynthesis of palmitic acid	
9.	Unit 3: Lipid Metabolism Ketogenesis	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Generic**

Class/Semester –4th Semester **(CBCS)**

Name of the Paper – **GE IV: Environment and Public Health**

Units Assigned – Unit 1 and Unit 5

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 3: Pollution- Air pollution sources and effects	
2.	Unit 3: Pollution -Water pollution sources and effects	
3.	Unit 3: Pollution Noise - pollution sources and effects	
4.	Unit 5 Diseases - Causes, symptoms and control of tuberculosis	
5.	Unit 5 Diseases - Causes, symptoms and control of tuberculosis	
6.	Unit 5 Diseases - Causes, symptoms and control of Asthma	
7.	Unit 5 Diseases - Causes, symptoms and control of Asthma s	
8.	Unit 5 Diseases - Causes, symptoms and control of Cholera	
9.	Unit 5 Diseases - Causes, symptoms and control of Cholera	
10.	Unit 5 Diseases - Causes, symptoms and control of Minamata Disease	
11.	Unit 5 Diseases - Causes, symptoms and control of Minamata Disease	
12.	Unit 5 Diseases - Causes, symptoms and control of typhoid	
13.	Unit 5 Diseases - Causes, symptoms and control of typhoid	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Honours**

Class/Semester –6th Semester **(CBCS)**

Name of the Paper – **C 13: Developmental Biology**

Units Assigned –Unit 1 and Unit 5

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 1: Introduction Historical perspective and basic concepts: Phases of development	
2.	Unit 1: Cell-Cell interaction	
3.	Unit 1: Cell-Cell interaction	
4.	Unit 1: Pattern formation	
5.	Unit 1: Differentiation and growth	
6.	Unit 1: Differential gene expression	
7.	Unit 1: Cytoplasmic determinants and asymmetric cell division	
8.	Unit 1: Cytoplasmic determinants and asymmetric cell division	
9.	Unit 5: Implications of Developmental Biology: Teratogenesis: Teratogenic agents and their effects on embryonic development	
10.	Unit 5: In vitro fertilization	
11.	Unit 5: Stem cell (ESC)	
12.	Unit 5: Amniocentesis	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Honours**

Class/Semester –6th Semester **(CBCS)**

Name of the Paper – **C 14: Evolutionary Biology**

Units Assigned –Unit 3, Unit 7 and Unit 8

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	Unit 3: Evidences of Evolution: Fossil record (types of fossils, transitional forms,	
2.	Unit 3: Geological time scale	
3.	Unit 3: Evolution of horse.	
4.	Unit 3: Evolution of horse.	
5.	Unit 3: Three domains of life	
6.	Unit 3: Neutral theory of molecular evolution, molecular clock , example of globin gene family	
7.	Unit 3: Neutral theory of molecular evolution, molecular clock , example of globin gene family	
8.	Unit 7: Extinctions; Back ground and mass extinctions (causes and effects), detailed example of K-T extinction.	
9.	Unit 7: Extinctions; Back ground and mass extinctions (causes and effects), detailed example of K-T extinction.	
10.	Unit 8: Origin and evolution of man; Unique hominin characteristics contrasted with primate. characteristics, primate phylogeny from Dryopithecus leading to Homo sapiens, molecular analysis of human origin.	
11.	Unit 8: Origin and evolution of man; Unique hominin characteristics contrasted with primate. characteristics, primate phylogeny from Dryopithecus leading to Homo sapiens, molecular analysis of human origin.	
12.	Unit 8: Origin and evolution of man; Unique hominin characteristics contrasted with primate. characteristics, primate phylogeny from Dryopithecus leading to Homo sapiens, molecular analysis of human origin.	

DIGBOI COLLEGE, DIGBOI

Course Plan

Name of the Teacher- Dr. Moni Kankana Kalita

Course –Honours / Generic – **Honours**

Class/Semester –6th Semester **(CBCS)**

Name of the Paper: DSE 3: Fish and Fisheries

Units Assigned –Unit 2 and Unit 4

Marks Assigned – 13.25 out of 53

Class	Topic/ Unit	Remarks
1.	UNIT 2: Morphology and Physiology: Communication in teleosts	
2.	UNIT 2: Morphology and Physiology: Reproductive strategies (special reference to Indian fishes)	
3.	UNIT 2: Morphology and Physiology: Electric organs	
4.	UNIT 2: Electric organs	
5.	UNIT 2: Bioluminiscience	
6.	UNIT 2: Mechanoreceptors	
7.	UNIT 2: Schooling	
8.	Unit 2: Parental care; Migration	
9.	Unit 2: Migration	
10.	Unit 4: Aquaculture: Preparation of compound diets for fish	
11.	Unit 4: Aquaculture: Role of water quality in aquaculture	
12.	Unit 4: Aquaculture: Fish diseases: Fungal, Bacterial, viral and parasitic; Preservation and processing of harvested fish, Fishery byproducts.	
13.	Unit 4: Aquaculture: Fish diseases: Fungal, Bacterial, viral and parasitic; Preservation and processing of harvested fish, Fishery byproducts.	
14.	Unit 4: Aquaculture: Preservation and processing of harvested fish, Fishery byproducts.	
15.	Unit 4: Aquaculture: Preservation and processing of harvested fish, Fishery byproducts	
16.	Unit 4: Fishery byproducts	
17.	Unit 4: Fishery byproducts	

COURSE PLAN : APARAJITA GOGOI DEPARTMENT OF ZOOLOGY : 2023 JANUARY

EVEN SEMESTER CLASSES

MONTH	WEEK	SEM II H	SEM IV H	SEM VI H	SEM II G	SEM IV G	Remark
January	3rd	**Ppaer: C3** **UNIT 6** Echinodermata-General character	Introductory class **C 10- Unit 5-** Mitochondria str,	**C 13-** Unit 4 Metamorphosis changes; Hormonal regulation of Amphibian metamorphosis **C 13-** Hormonal regulation of Insect metamorphosis			
	4th	**C3-Unit -6** Echinoderm classifi. Water vascular system C4-Unit 8: Cell signalling overview	**C 10- Unit 5-** Mitochondria function Oxidation-Reduction	**C 13-** Regeneration and Aging C-14-Chemogeny & Biogeny	**GE-**Unit II-Vectors Biological - mechanical		
February	1st	**C4- Unit 6-** Chromatin-Euchromatin & Heterochromatin, Nucleosome	**C 10-Unit 5-** Oxidative Phosphorylation-Energy currency Unit5- Electron Transport system **C8-Unit 1-** Comparative anatomy-integumentary system in vertebrates	**C 14-**Unit 1: Evolution of Eukaryotes Origin of photosynthesis DSE- **IMMUNOLOGY** Unit 4: Antigen – antibody interaction		**GE-Environment & Public Health** **Unit 2-** Green house gases, Global warming	
	2nd		**C-10:** Unit 5 –ETS	**C 14-**Unit 1 Darwinism-Lamarckism			

Month	Week	SEM II H	SEM IV H	SEM VI H	SEM II G	SEM IV G	SEM VI G
February	2nd	**C4**: Unit 8- GPCR- Second messenger	**C 9:** Unit 2- Respiration mechanism	**DSE-Fishery** Unit 4- Morphometry & Meristic counts	**GE Unit II** Carrier and vectors		
	3rd	C4- Nucleus Structure	C 9: Unit 2- Physiology of Respiration	**DSE IMMUNOLOGY** Unit 4- Vaccine- vaccination, Immunodiffusion-ELISA & RIA		**Unit 2**- Green house effect, Acid Rain	
	4th	**C4 : Unit 8** Nucleus function	**C 9: Unit 2-** Physiology of Respiration	**DSE – Fishery** Unit 4- Extensive- Intensive fish culture			
March	1st	**C3 : Unit 5** Mollusca –Torsion	**C 9: Unit 2-** Dissociation Curves	**DSE – Fishery** Brood stock management		**Unit 2-** Ozone depletion	
	2nd	**1st sessional exam**					
	3rd	**C3 : Unit 5** Mollusca – Detorsion	**C 9: Unit 2-** Carbon monoxide poisoning; Control of respiration	**DSE – Fishery** Induced breeding; Aquarium Maintenance **DSE – Fishery**			
	4th	**C4- Nucleolus** Structure and function Nucleolous	**Unit 5**- Inhibitors and uncouplers of ETS				
April	1st	**Revision**					