Teaching Plan Academic Session: 2025-26
Department of Chemistry
Jagannath Barooah University, Jorhat

Name of the Teacher: Dr. Bhupen Kumar Baruah
Semester: ODD (August to December, 2025)

Undergraduate Course								
Class/Semester	**Title & Code of The Allotted Paper (Credit)**	**Method of Teaching**	**Teaching Material**	**Unit**	**Topic**	**Period/ Hours Required**	**Details of the Contents**	**Remarks / Books**
Semester I (Odd)	[Major Course] General Chemistry–I (CHMMJ-011) (4 Credit)	(a) Traditional lecture methods (b) Using ICT (PPT and Audio Visual Aids); (c) Critical Thinking & Discussion (d) Assessment and evaluation	Textbooks and Reference Books E-resources (e-Pathshala, SWAYAM and N-List) Pictures & Diagrams	II	Periodicity of Elements	L-10; Marks: 10	Development of modern periodic table, s, p and d block, Effective nuclear charge, screening effect, Slater's rule, IP, EGA, Electronegativity scale, Fajans rule, Dipole moment, % ionic character	Inorganic Chemistry, 5e, *Miessler & Tarr* Inorganic Chemistry, 6e, Shriver *et.al.* Principles of Inorganic Chemistry, *Puri, Sharma & Kalia* E-Resources: e-Pathshala, SWAYAM and N-List

Semester I (Odd)	[Multidisciplinary Course] Chemistry in Every Day Life (CHMMU-011) (3 Credit)	-Do-	-Do-	I & II	Household Chemicals Biomolecules	L-08; Marks: 10 L-07; Marks: 08	Unit-I: Common household chemicals and their applications: Toothpaste, Soaps, detergents, toilet cleaner, perfumes, sanitizer, mosquito sprays; Major ingredients and thers harmful effects Unit-II: Biomolecules: Definitions, classifications and Functions of Carbohydrates, Proteins, Fats, Enzymes Hormon and Vitamins, Hormonal diseases, Vitamin deficiency diseases	Chemistry in Every Day Life; K. Shingh, 3e E-resources: e-Pathshala, SWAYAM, IGNOU and N-List

Semester I (Odd)	[Value Added Course] Health & Wellness (CHMVA-011) (2 Credit)	-Do-	-Do-	II & III	Basics of Food and Nutritions Utilization of Food and Economics of Food	L-12; Marks: 15 L-08; Marks: 08	Unit-II: Definition of Food , Nutrition, Nutritional Status, Physiological Factors, Socio-cultural factors, Psycho-social factors of food acceptance, Micronutrients and macronutrients, Vitamins, Types and their function and deficiency diseases Functions of Unit-III: Nutrition during pregnancy, infancy, pre-school age and old age, Kitchen garden, PDS, street food and Package food	Food Science and Nutrition; S. Roday, 5e E-resources from e-Pathshala, SWAYAM, IGNOU and N-List

Semester III (Odd)	[Major Course] Inorganic Chemistry–I (CHMMJ-031) (4 Credit)	-Do-	-Do-	III, IV & VI	Theoretical Principle of Quality Analysis Principle of Volumetric and Gravimetric Analysis Hydrides and Chemistry of 13 Group Elements	L-12; Marks: 12 L-06; Marks: 10 L-10; Marks: 12	Unit-III: Basic principles involved in salt analysis, different types of equilibrium, solubility products, common ion effect, Interfering radicals, their removal, confirmatory test for acid radicals, detection of anions in mixture, Unit-IV: Principle of volumetric and gravimetric analysis, estimation of Ni, Ca, Mg, etc. Unit-VII: Hydrides, definition and classification, Basic Be-acetate and nitrites, Chemistry of B and their compounds, Wade's rule, Borane carborane etc.	Inorganic Chemistry, *Housecroft and Sharpe*, 3e; Inorganic Chemistry, *Jemes House*, 3e; Inorganic Chemistry, 5e, *Miessler & Tarr* Inorganic Chemistry, 6e, *Shriver et.al.* Inorganic Chemistry, *Huheey et. al* E-resources from e-Pathshala, SWAYAM and N-List
Semester III (Odd)	[Minor Course] General Chemistry–III (CHMMI-031) (4 Credit)	-Do-	-Do-	II	Volumetric and Gravimetric Analysis	L-05; Marks: 06	Unit-IV: Principle of volumetric (Redox and Complexometry) and gravimetric analysis, Application in analytical chemistry: estimation of Ni, Ca, Mg, etc.	

Semester V (Odd)	[Major Course] Inorganic Chemistry–III (CHMMJ-051) (4 Credit)	-Do-	-Do-	III & V	Halogen Family Bioinorganic Chemistry	L-05; Marks: 07 L-16; Marks: 15	Unit-III: Electronic configuration, valency and preparations; Interhalogen compounds, polyhalides, pseudo halides, fluorocarbons, charge transfer complexes, Unit-V: Essential and non essential elements, Metals in biological systems, Heme proteins, Non heme iron proteins	Inorganic Chemistry, *Housecroft and Sharpe*, 3e; Inorganic Chemistry, *Jemes House*, 3e; Inorganic Chemistry, 5e, *Miessler & Tarr* Inorganic Chemistry, 6e, *Shriver et.al.* Inorganic Chemistry, *Huheey et. al* E-resources from e-Pathshala, SWAYAM and N-List
Semester V (Odd)	[Major Course] Inorganic Chemistry–IIII (CHMMJ-054) (4 Credit)	(a) Traditional lecture methods (b) Using ICT (PPT and Audio Visual Aids)	Textbooks and Reference Books	I & II	Gravimetric Analysis Inorganic Preparation	L-30; Marks: 23	Estimation of Ni using DMG Estimation of Fe as Fe_2O_3 Preparation of inorganic complexes such as Potassiom tris (oxalato) ferrate, Tetraammine copper (II) sulphate etc.	Practical Chemistry, *Sudarshan Baruah Practical Chemistry, Jagadamba Singh* *E-resources*
Postgraduate Course								
Semester I (Odd)	[Core Course] Inorganic Chemistry–I (PCHMC-101) (4 Credit)	(a) Traditional lecture methods (b) Using ICT (PPT and Audio Visual Aids); (c) Critical Thinking & Discussion (d) Assessment and evaluation	Textbooks and Reference Books E-resources (e-Pathshala, SWAYAM and N-List) Pictures & Diagrams	II & III	Acid-Base and Redox Chemistry Bioinorganic Chemistry	L-10; Marks: 15 L-20; Marks: 25	Acid base concept, HSAB, Half cell reactions, Latimar and Frost diagram, Disproportionation reaction, Cyclic voltrametry	Inorganic Chemistry, 5e, *Miessler & Tarr* Inorganic Chemistry, 6e, Shriver *et.al.* Inorganic Chemistry, *Housecroft and Sharpe*, 3e; Inorganic Chemistry, *Jemes House*, 3e; Bioinorganic Chemistry, *Hussain Reddy* E-Resources: e-Pathshala, SWAYAM and N-List

Semester I (Odd)	[Core Course] Chemistry Lab. –I (PCHMC-101) (2- Credit)	(a) Traditional lecture methods (b) Using ICT (PPT and Audio Visual Aids)	Textbooks and Reference Books E-resources	I	Preparation & Characterization of inorganic compounds	L-60; Marks: 30	Preparation of inorganic complex salts and their characterization by UV, IR, Cyclic voltammeter Complex salts of Fe, Zn, Cu, Co with monodentate and poly dentate ligands	Practical Chemistry, *Sudarshan Baruah* *Practical Chemistry, Jagadamba Singh* *E-resources*