

Name of the Department: Chemical Sciences

Programme: M.Sc. Chemistry

Paper CHL404-18 Spectroscopy-I

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Solve structural problems based on UV-Vis, IR, 1H-NMR, 13C-NMR and mass spectral data.	√	√	√	√	√		Evaluation	Yes	Mid semester tests, End Term Exams
CO 2: Elucidate the structures of various organic compounds on the basis of spectral data.	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams
CO 3: Understand various involved processes responsible for NMR chemical shifts and splitting patterns and mass spectrometry.	√	√	√	√	√	√	Understanding	Yes	Mid semester tests, End Term Exams
CO 4: Illustrate the mechanisms that give rise to the infrared and UV-Visible absorption bands and identify to which functional groups each correspond.	√	√	√	√	√		Evaluation	Yes	Mid semester tests, End Term Exams
CO 5:								Yes	Mid semester tests, End Term Exams

Paper CHP407-18 Inorganic Chemistry Lab

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Preparation of different inorganic complexes.	√	√	√	√	√		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Purification and crystallisation of inorganic compounds.	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams
CO 3: Interpretation of compounds using UV-Vis, FT-IR techniques.	√	√	√	√	√	√	Evaluation	Yes	Mid semester tests, End Term Exams
CO 4: Measurement of various physical properties such as magnetic moment of complexes.	√	√	√	√	√	√	Evaluation	Yes	Mid semester tests, End Term Exams
CO 5: Gravimetric analysis of various cations.	√	√	√	√	√		Applying	Yes	Mid semester tests, End Term Exams

Paper CHP408-18 Organic Chemistry Lab

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Apply various methods techniques in organic synthesis to build organic molecules.	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams
CO 2: Understand the fundamental mechanistic pathways of organic synthesis involving various practical lab techniques together.	√	√	√	√			Understanding	Yes	Mid semester tests, End Term Exams
CO 3: Apply the spectroscopic techniques for the determination of molecular structures of organic molecules.	√	√	√	√	√		Applying	Yes	Mid semester tests, End Term Exams
CO 4: Present their work with practical skills and the awareness of health and safety procedures.	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams

Paper CHL414-18 Spectroscopy-II

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Learn the fundamental and advanced concepts of Microwave, Infrared Vibration-rotation Raman and infra-red Spectroscopy and their applications for chemical analysis	√	√	√	√	√		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Understand Electronic spectroscopy of different elements and simple molecules.	√	√	√	√	√		Understanding	Yes	Mid semester tests, End Term Exams
CO 3: Study the concepts and principles of Mössbauer Spectroscopy and its application.	√	√	√	√	√	√	Understanding	Yes	Mid semester tests, End Term Exams
CO 4: Apply Nuclear Quadruple Resonance and Electron Spin Resonance Spectroscopy for organic compounds analysis.	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams
CO 5: Solve structural problems based on these techniques.	√	√	√	√	√	√	Evaluation	Yes	Mid semester tests, End Term Exams

Paper CHL416P-18 Physical Chemistry Lab

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the basic procedures for carrying out a physical chemistry practical like preparation and standardisation of solutions, handling the equipments and measuring with precision.	√	√	√		√	√	Understanding, Apply	Yes	Mid semester tests, End Term Exams
CO 2: Correlate the theoretical and practical aspects and know about the limits of the experimental error.	√	√	√		√	√	Understanding, Apply	Yes	Mid semester tests, End Term Exams

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CO 3: Determine the various physical parameters for the various problems under study.	✓	✓	✓	✓	✓	✓	Evaluate	Yes	Mid semester tests, End Term Exams
CO 4: Verify various laws studied in the theory part.	✓	✓	✓	✓	✓	✓	Analyse	Yes	Mid semester tests, End Term Exams

**Paper CHP417P-18 Advanced Chemistry Lab-I**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Preparation of different inorganic complexes.	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Purification and crystallisation of inorganic compounds.	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams
CO 3: Interpretation of compounds using UV-Vis, FT-IR techniques.	✓	✓	✓	✓	✓	✓	Evaluation	Yes	Mid semester tests, End Term Exams
CO 4: Measurement of various physical properties such as magnetic moment of complexes.	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams
CO 5: Applying related experiments for their research work.	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams

**Paper CHL504-18 Advanced Characterization Techniques**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the topography, morphology, composition, relationship between composition and material properties.	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Learn the functioning of the X-ray diffractometer, about its components and would be able to determine the crystal structure of a material, find impurity in the material, different phases present in the mixture of compound qualitative as well as functionalities	✓	✓	✓	✓	✓	✓	Understanding and Analyzing	Yes	Mid semester tests, End Term Exams
CO 3: Understand the instrumentation of TGA and also to calculate the weight loss with temperature, types of changes occurring in the material/substances during thermal bredding, enthalpy changes during heat treatment of a compound.	✓	✓	✓	✓	✓	✓	Understanding a	Yes	Mid semester tests, End Term Exams
CO 4: Apply the knowledge of various characterization techniques in material industries, metallurgy industries, electronic industries, civil Engineering.	✓	✓	✓	✓	✓	✓	Understanding, A	Yes	Mid semester tests, End Term Exams
CO 5: Apply the quantitative and qualitative separation techniques in purification and its applications in food industry, pharmaceutical industry, purification, removal of pollutants, medicinal chemistry and essential oils.	✓	✓	✓	✓	✓	✓	Understanding, Analyzing and applying	Yes	Mid semester tests, End Term Exams

**Paper CHPS06-18 Advanced Chemistry Lab-II**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Emphasize the importance of different techniques used for titration viz. potentiometry, pHmetry and amperometry .	✓	✓	✓	✓	✓	✓	Understanding, Apply, Analyse, Create	Yes	Mid semester tests, End Term Exams
CO 2: Correlate the theoretical and practical aspects and know about the limits of the experimental error.	✓	✓	✓	✓	✓	✓	Understanding, Apply	Yes	Mid semester tests, End Term Exams
CO 3: Determine the various physical parameters for the various problems under study.	✓	✓	✓	✓	✓	✓	Evaluate	Yes	Mid semester tests, End Term Exams
CO 4: Verify various laws studied in the theory part.	✓	✓	✓	✓	✓	✓	Analyse	Yes	Mid semester tests, End Term Exams

**Paper CHL512A-18 Advanced Physical Chemistry**


Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand major aspects of chemical terminology related to surface science, polymers and electrode processes.	✓	✓	✓	✓	✓	✓	Understand, Remember	Yes	Mid semester tests, End Term Exams
CO 2: Develop insights in the micelle formation process and emphasize its application in daily life.	✓	✓	✓	✓	✓	✓	Apply, Analyse	Yes	Mid semester tests, End Term Exams
CO 3: Know about polymers in detail.	✓	✓	✓	✓	✓	✓	Remember	Yes	Mid semester tests, End Term Exams
CO 4: Correlate various types of voltammetric techniques and their importance in sensing field.	✓	✓	✓	✓	✓	✓	Apply, Analyse, Evaluate	Yes	Mid semester tests, End Term Exams

**Paper CHL512E-18 Green Chemistry**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
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CO1: Conceptualize the various syntheses using novel and greener methods.	√	√	√	√	√		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Predict the relationships between organic chemical structures and their reactivity in different greener and benign conditions.	√	√	√	√	√		Evaluation	Yes	Mid semester tests, End Term Exams
CO 3: Learn the fundamental and advanced concepts of green chemistry in reaction mechanisms.	√	√	√	√	√		Understanding	Yes	Mid semester tests, End Term Exams
CO 4: Apply the new methodologies for altering the reactivity patterns of substrates	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams
CO 5: Synthesize various molecules using combinations of reactive species in novel conditions.	√	√	√	√	√		Applying	Yes	Mid semester tests, End Term Exams

  
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**Name of the Department: Chemical Sciences**  
**Programme: B.Sc. Honours Chemistry**

**Paper BHHL105-19 Communicative English-I**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Students will acquire basic proficiency in reading & listening, writing and speaking skills.	√	√	√	√	√	√	Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Students will be able to understand spoken and written English language, particularly the language of their chosen technical field.	√	√	√	√	√	√	Understanding	Yes	Mid semester tests, End Term Exams
CO 3: They will be able to converse fluently and produce on their own clear and coherent texts.	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams
CO 4: Students will become proficient in professional communication such as interviews, group discussions, office environments, important reading skills as well as writing skills	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams

**Paper BHCP107-19 Inorganic Chemistry Lab-I**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand to calibrate and run the instruments for analysis.	√	√	√	√				Yes	Mid semester tests, End Term Exams
CO 2: Learn to the quantitative analysis of various metal ions/cations and anions.	√	√	√	√	√	√		Yes	Mid semester tests, End Term Exams
CO 3: Understand the various principles of different techniques involved in the quantitative analysis.	√	√	√	√	√	√		Yes	Mid semester tests, End Term Exams
CO 4: Learn to prepare various inorganic compounds.	√	√	√	√				Yes	Mid semester tests, End Term Exams

**Paper BHCP108-19 Organic Chemistry Lab-I**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: To check the purity of organic compounds by determining the melting or boiling points	√	√	√	√	√		Understand	Yes	Mid semester tests, End Term Exams
CO 2: To develop preparative skills for purification of organic compounds by crystallization method.	√	√	√	√	√		Understand and apply	Yes	Mid semester tests, End Term Exams
CO 3: To determine the element or functional groups present in organic compound by organic qualitative analysis.	√	√	√	√	√		Understand and apply	Yes	Mid semester tests, End Term Exams
CO 4: To present their work with practical skills and the awareness of health and safety procedures.	√	√	√	√	√	√	Apply	Yes	Mid semester tests, End Term Exams
CO 5: To apply related experiments for their research work	√	√	√	√	√	√	Apply	Yes	Mid semester tests, End Term Exams

**Paper BHHL115-19 Communicative English-II**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Students will acquire basic proficiency in LSRW skills- listening, speaking, reading, and writing.	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams
CO 2: Students will be able to develop their vocabulary so that they can understand spoken and written English language, particularly the language of their chosen technical field	√	√	√	√	√	√	Understanding	Yes	Mid semester tests, End Term Exams
CO 3: Students will be introduced to the skills and strategies of reading and writing by identifying organizational patterns, spotting classification systems and understanding associations between ideas through study of literary texts.	√	√	√	√	√	√	Understanding	Yes	Mid semester tests, End Term Exams
CO 4: Students will be able to converse fluently and produce on their own clear and coherent texts.	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams
CO 5: Students will be able to improve the employability of students and make them proficient in professional communication through understanding of career documents; job interviews; group discussions; internal communication in office environments etc.	√	√	√	√	√	√	Applying	Yes	Mid semester tests, End Term Exams

**Paper BHCP117-19 Inorganic Chemistry Lab-II**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
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CO1: CO1. Understand the concept of qualitative analysis.	✓	✓	✓	✓			Understanding	Yes	Mid semester tests, End Term Exams
CO 2: CO2. Learn to identify present cations and anions through qualitative analysis of various metal ions/cations and anions.	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams
CO 3: CO3. Understand the various techniques/principles involved in the qualitative analysis of mixtures in presence or absence of interfering ions.	✓	✓	✓	✓			Understanding	Yes	Mid semester tests, End Term Exams
CO 4: CO4. Learn to separate and identify less familiar ions through qualitative analysis.	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams

**Paper BHCP118-19 Physical Chemistry Lab-I**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the basic procedures for carrying out a physical chemistry practical like preparation and standardisation of solutions, handling the equipments and measuring with precision.	✓	✓	✓		✓	✓	Understanding, Apply	Yes	Mid semester tests, End Term Exams
CO 2: Correlate the theoretical and practical aspects and know about the limits of the experimental error.	✓	✓	✓		✓	✓	Understanding, Apply	Yes	Mid semester tests, End Term Exams
CO 3: Determine the various physical parameters for the various problems under study.	✓	✓	✓	✓		✓	Evaluate	Yes	Mid semester tests, End Term Exams
CO 4: Verify various laws studied in the theory part.	✓	✓	✓	✓		✓	Analyse	Yes	Mid semester tests, End Term Exams
								Yes	Mid semester tests, End Term Exams

**Paper UC-BSHP-125-19 Physics Lab-II**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Able to verify the theoretical concepts/laws learnt in theory courses.	✓	✓	✓	✓	✓	✓	understand	Yes	Mid semester tests, End Term Exams
CO 2: Trained in carrying out precise measurements and handling sensitive equipment.	✓	✓	✓	✓	✓	✓	understand	Yes	Mid semester tests, End Term Exams
CO 3: Understand the methods used for estimating and dealing with experimental uncertainties and systematic "errors".	✓	✓	✓	✓	✓	✓	apply	Yes	Mid semester tests, End Term Exams
CO 4: Learn to draw conclusions from data and develop skills in experimental design.	✓	✓	✓	✓	✓	✓	apply	Yes	Mid semester tests, End Term Exams
CO 5: Document a technical report which communicates scientific information in a clear and concise manner.	✓	✓	✓	✓	✓	✓	apply	Yes	Mid semester tests, End Term Exams

**Paper BHCL203-19 Spectroscopy**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the fundamental principles and theories of various spectroscopic techniques	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Learn the interaction of various electromagnetic radiations with matter	✓	✓	✓	✓	✓		Applying	Yes	Mid semester tests, End Term Exams
CO 3: Learn about the behaviour of different types of compounds towards different electromagnetic radiations	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams
CO 4: Understand the applications of interaction of light in their characterization	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 5: Learn about the role of different techniques in the characterization of different compounds	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams

**Paper BHCP206-19 Organic Chemistry Lab-II**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: To synthesise organic compounds by conventional and greener approach.	✓	✓	✓	✓	✓		Understanding and Apply	Yes	Mid semester tests, End Term Exams
CO 2: To develop preparative skills for purification of organic compounds by crystallization method.	✓	✓	✓	✓	✓		Understanding and Apply	Yes	Mid semester tests, End Term Exams
CO 3: To separate the organic compound by thin layer chromatography technique.	✓	✓	✓	✓	✓		Understanding and Apply	Yes	Mid semester tests, End Term Exams
CO 4: To present their work with practical skills and the awareness of health and safety procedures.	✓	✓	✓	✓	✓	✓	Apply	Yes	Mid semester tests, End Term Exams
CO 5: To apply related experiments for their research work	✓	✓	✓	✓	✓	✓	Apply	Yes	Mid semester tests, End Term Exams

**Paper BHCP207-19 Physical Chemistry Lab-II**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
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CO1: Understand the basic procedures for carrying out a physical chemistry practical like preparation and standardisation of solutions, handling the equipments and measuring with precision.	✓	✓	✓	✓	✓	✓	Understanding, Apply	Yes	Mid semester tests, End Term Exams
CO 2: Correlate the theoretical and practical aspects and know about the limits of the experimental error.	✓	✓	✓	✓	✓	✓	Understanding, Apply	Yes	Mid semester tests, End Term Exams
CO 3: Determine the various physical parameters for the various problems under study.	✓	✓	✓	✓	✓	✓	Evaluate	Yes	Mid semester tests, End Term Exams
CO 4: Verify various laws studied in the theory part.	✓	✓	✓	✓	✓	✓	Analyse	Yes	Mid semester tests, End Term Exams
								Yes	Mid semester tests, End Term Exams

#### Paper BHCL213-19 Green Chemistry

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: CO1. Understand the fundamental concepts of green chemistry	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 2: CO2. Learn the use of these fundamental principles for the designing of various chemical reactions	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 3: CO3. Understand the various techniques available and their present applications in different green reactions	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 4: CO4. Learn about the various applications of the green chemistry	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams
CO 5: CO5. Understand the various expected future trends of the green chemistry	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams

#### Paper BHCL214-19 Polymer Chemistry

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Study the nomenclature, classifications and bonding in polymers	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Learn the criteria for the synthesis of polymers and mechanism involved in polymerization	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 3: Understand the morphology, kinetics and their structure property relationship	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 4: Learn the various techniques used for determining the molecular weight of polymeric compounds	✓	✓	✓	✓	✓	✓	Understanding and Evaluation	Yes	Mid semester tests, End Term Exams
CO 5: Study the physical, thermal, Flow and Mechanical Properties of Polymers	✓	✓	✓	✓	✓	✓	Understanding and Analysis	Yes	Mid semester tests, End Term Exams

#### Paper BHCL216-19 Basic Analytical Chemistry

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the basics of analytical chemistry.	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Know about soil and water, their sampling, analysis & purification methods.	✓	✓	✓	✓	✓	✓	Understanding and	Yes	Mid semester tests, End Term Exams
CO 3: Familiarise with the principles and techniques of chromatography.	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 4: Aware of the nutritional value of various food items and concept of food processing and adulteration.	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 5: Understand the functions of various constituents present in cosmetics.	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams

#### Paper BHCP217-19 Inorganic Chemistry Lab-III

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the concept of quantitative analysis.	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Understand the various techniques/principles involved in the quantitative analysis for present metal ions.	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 3: Learn to synthesize various inorganic compounds	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams
CO 4: Understand the principles involved in chromatographic separations	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 5: Learn to estimate the cations present, through quantitative analysis	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams

#### Paper BHCP218-19 Physical Chemistry Lab-III

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
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CO1: Understand the basic procedures for carrying out a physical chemistry practical like preparation and standardisation of solutions, handling the equipments and measuring with precision.	✓	✓	✓		✓	✓	Understanding, Apply	Yes	Mid semester tests, End Term Exams
CO 2: Correlate the theoretical and practical aspects and know about the limits of the experimental error.	✓	✓	✓		✓	✓	Understanding, Apply	Yes	Mid semester tests, End Term Exams
CO 3: Determine the various physical parameters for the various problems under study.	✓	✓	✓	✓		✓	Evaluate	Yes	Mid semester tests, End Term Exams
CO 4: Verify various laws studied in the theory part.	✓	✓	✓	✓		✓	Analyse	Yes	Mid semester tests, End Term Exams
								Yes	Mid semester tests, End Term Exams

**Paper BHCP219-19 Basic Analytical Chemistry Lab**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Identify the adulterants in common food items.	✓	✓			✓	✓	Understanding and Analyzing	Yes	Mid semester tests, End Term Exams
CO 2: Analyse samples of soil (pH) and water (pH, acidity, alkalinity etc)	✓	✓	✓	✓	✓	✓	Understanding and Analyzing	Yes	Mid semester tests, End Term Exams
CO 3: Learn the paper chromatographic technique for separation of metal ions.	✓	✓	✓			✓	Understanding and Analyzing	Yes	Mid semester tests, End Term Exams
CO 4: Learn the spectrophotometric determination of compounds in commercial products.	✓	✓	✓	✓	✓	✓	Understanding and Analyzing	Yes	Mid semester tests, End Term Exams

**Paper BHCL304-19 Analytical Clinical Biochemistry**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the structure & functions of Biomolecules.	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: An advanced understanding and applied knowledge of the theory of clinical biochemistry.	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 3: A critical understanding of how biochemical investigations are employed to develop a clinical diagnosis.	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 4: To gain knowledge and understanding of clinical disorders.	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 5: To gain knowledge of biological samples and their collection procedures.	✓	✓	✓	✓	✓		Applying	Yes	Mid semester tests, End Term Exams

**Paper BHCL305-19 Industrial Chemicals and the Environment**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: understand different toxic gases and their toxicity hazards, Safe design systems for large scale production of Industrial gases.	✓	✓	✓		✓	✓	Understand, Analyze and Apply	Yes	Mid semester tests, End Term Exams
CO 2: Understand manufacturing processes, handling and storage of inorganic chemicals and knowledge of Hazardous effects of the inorganic chemicals on human beings and vegetation.	✓	✓			✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 3: understand the requirement of ultra-pure metals for the semiconducting technologies.				✓	✓		understandng	Yes	Mid semester tests, End Term Exams
CO 4: understand different sources, effects and control measures of air, water pollutants, water quality parameters, different methods of Treatment of effluents from different sources.	✓	✓	✓	✓	✓	✓	Understand and Analyze	Yes	Mid semester tests, End Term Exams
CO 5: understand different sources of energy, source of nuclear waste and its disposal. Use of biocatalyst in chemical industries.			✓	✓	✓	✓	Understand and Analyze	Yes	Mid semester tests, End Term Exams

**Paper BHCL306-19 Ligand Field Theory**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the fundamental concepts of various aspects of Ligand Field Theory	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Learn the different aspects of crystal field theory	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams
CO 3: Understand the effect of weak, medium and strong crystal field on free ions	✓	✓	✓	✓	✓		Understand	Yes	Mid semester tests, End Term Exams
CO 4: Learn about the electronic spectra of transition metal complexes	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams
CO 5: Understand the factors affecting the electronic spectra of the complexes	✓	✓	✓	✓	✓		Understand	Yes	Mid semester tests, End Term Exams

Head  
Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala - 144603 Punjab (INDIA)

**Paper BHCP307-19 Inorganic Chemistry Lab-IV**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the concept of quantitative analysis.	✓	✓	✓	✓	✓		Understand	Yes	Mid semester tests, End Term Exams
CO 2: Learn to estimate the present cations through quantitative analysis	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams
CO 3: Understand the various techniques/principles involved in the quantitative analysis present metal ions.	✓	✓	✓	✓	✓		Understand	Yes	Mid semester tests, End Term Exams
CO 4: Learn to perform the volumetric analysis using different methods.	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams

**Paper BHCP308-19 Organic Chemistry Lab-III**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: To synthesise organic compounds by various approach.	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: To develop preparative skills for purification of organic compounds by crystallization method.	✓	✓	✓	✓	✓		Understanding and evaluation	Yes	Mid semester tests, End Term Exams
CO 3: To separate the organic compound by thin layer chromatography technique.	✓	✓	✓	✓	✓		Analysis and Evaluation	Yes	Mid semester tests, End Term Exams
CO 4: To present their work with practical skills and the awareness of health and safety procedures.	✓	✓	✓	✓	✓	✓	Analysis	Yes	Mid semester tests, End Term Exams
CO 5: To apply related experiments for their research work	✓	✓	✓	✓	✓	✓	Analysis	Yes	Mid semester tests, End Term Exams

**Paper BHCL313-19 Catalysis**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the Organometallic chemistry	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Understand the fundamental concepts of various concepts involved in catalysis.	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 3: Learn different application of catalysis in the synthesis of organic compounds.	✓	✓	✓	✓	✓		Apply	Yes	Mid semester tests, End Term Exams
CO 4: To Understand role of catalysis in biological model	✓	✓	✓	✓	✓	✓	Apply	Yes	Mid semester tests, End Term Exams

**Paper BHCL314-19 Analytical Methods in Chemistry**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: explain the fundamentals of analytical chemistry and steps of a characteristic analysis.	✓	✓	✓		✓	✓	Understanding	Yes	Mid semester tests, End Term Exams
CO 2: estimate kinds of errors in chemical analysis.	✓	✓	✓	✓	✓	✓	Apply, Analyse, Evaluate	Yes	Mid semester tests, End Term Exams
CO 3: identify quality of experimental measurements.	✓	✓	✓	✓	✓	✓	Remember	Yes	Mid semester tests, End Term Exams
CO 4: interpret the sources of random errors and effects of random errors on analytical results.	✓	✓	✓	✓	✓	✓	Understanding, Apply, Evaluate	Yes	Mid semester tests, End Term Exams
CO 5: Familiarise with various analytical techniques and compare them.	✓	✓	✓	✓	✓		Understanding, Remember	Yes	Mid semester tests, End Term Exams

**Paper BHCL315-19 Nanochemistry**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the fundamental concepts of nanomaterials.	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Learn the different methods of chemical synthesis of nanoparticles.	✓	✓	✓	✓	✓		Applying	Yes	Mid semester tests, End Term Exams
CO 3: Understand the basic techniques about the organic nanoparticles.	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 4: Learn about the various characterization techniques.	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams
CO 5: Understand the various applications of nanomaterials.	✓	✓	✓	✓	✓	✓	Understanding	Yes	Mid semester tests, End Term Exams

**Paper BHCL316-19 Molecular Modelling and Drug Design**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the fundamental concepts of molecular modelling.	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: Learn the different methods of energy minimization and computer simulation.	✓	✓	✓	✓	✓		Applying	Yes	Mid semester tests, End Term Exams
CO 3: Understand the basic concepts of molecular dynamics.	✓	✓	✓	✓	✓		Understanding	Yes	Mid semester tests, End Term Exams
CO 4: Learn about the various concepts of drug designing and molecular modelling.	✓	✓	✓	✓	✓	✓	Applying	Yes	Mid semester tests, End Term Exams

**Paper BHCP318-19 Organic Chemistry Lab-IV**



Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: To study about properties of amino acids/proteins/enzymes.	√	√	√	√	√		Understanding	Yes	Mid semester tests, End Term Exams
CO 2: To estimate amino acids/proteins by various methods.	√	√	√	√	√		Analysis	Yes	Mid semester tests, End Term Exams
CO 3: To understand the isolation and characterisation of DNA.	√	√	√	√	√	√	Understanding	Yes	Mid semester tests, End Term Exams
CO 4: To present their work with practical skills and the awareness of health and safety procedures.	√	√	√	√	√	√	Analysis	Yes	Mid semester tests, End Term Exams
CO 5: To apply related experiments for their research work	√	√	√	√	√	√	Analysis	Yes	Mid semester tests, End Term Exams

**Paper BHCP319-19 Physical Chemistry Lab-IV**

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	Skill	Focus on Employability / Entrepreneurship	Assessment Tools to Measure Attainment of CO
CO1: Understand the basic procedures for carrying out a physical chemistry practical like preparation and standardisation of solutions, handling the equipments and measuring with precision.	√	√	√		√	√	Understanding, Apply	Yes	Mid semester tests, End Term Exams
CO 2: Correlate the theoretical and practical aspects and know about the limits of the experimental error.	√	√	√		√	√	Understanding, Apply	Yes	Mid semester tests, End Term Exams
CO 3: Determine the various physical parameters for the various problems under study.	√	√	√	√		√	Evaluate	Yes	Mid semester tests, End Term Exams
CO 4: Verify various laws studied in the theory part.	√	√	√	√		√	Analyse	Yes	Mid semester tests, End Term Exams

  
 Head  
 Department of Chemical Sciences  
 IKG Punjab Technical University  
 Kapurthala - 144603 Punjab (INDIA)



Reshu Sanan &lt;reshusanan@gmail.com&gt;

**BOS (Chemical Sciences), IKGPTU, Kapurthala**

Reshu Talwar &lt;reshusanan@gmail.com&gt;

Thu, Feb 15, 2018 at 10:25 AM

To: Gaurav Bhargava <gauravorganic@gmail.com>, "Rupesh K. Manaktala" <rupesh.manak@gmail.com>, roopa\_noel@yahoo.co.in, rakesh\_chem@yahoo.com, spsinghgrewal@gmail.com, kumarnk31@gmail.com, gjpsingh@pu.ac.in, dryadavashok@gmail.com, anju.as@bcetgsp.ac.in, subodh\_gndu@yahoo.co.in, narinderchem@gmail.com, Ashok Malik <malik\_chem2002@yahoo.co.uk>, placements.ptu@gmail.com

**Dear Sir/ Madam**

A meeting of the Board of Studies in **Chemical Sciences** is scheduled to be held on **27th February, 2018 at 10:30 am** in the conference hall, Deptt. of Academics, 2ndFloor, I.K. Gujral Punjab Technical University, Jalandhar-Kapurthala Highway. The agenda of the meeting is to discuss the scheme and syllabus of B.Tech (Engineering Chemistry) and M.Sc. Chemistry and to discuss any other matter with the permission of the Chair.

You are requested to kindly make it convenient to attend the same. Kindly confirm your participation in the said meeting through e-mail [reshusanan@gmail.com](mailto:reshusanan@gmail.com) or through SMS at 9465884855.

TA& DA / Honorarium will be paid as per the University rules.

With Regards

**Dr Reshu Sanan****Assistant Professor (Chemistry)****Department of Chemical Sciences****IKG Punjab Technical University****Kapurthala-144603****M: 9465884855**

Head  
Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala - 144603 Punjab (INDIA)

# IKG Punjab Technical University, Kapurthala

## Minutes of meeting

**Subject:- Regarding minute of meeting of Board of studies on 27.2.2018**

A meeting of Board of Studies Chemical Sciences was held on February 27<sup>th</sup> 2018 at 10:30 am in the Conference Hall, 2<sup>nd</sup> Floor, Department of Academics, I.K.Gujral Punjab Technical University, Main Campus, Jalandhar-Kapurthala highway, Kapurthala Main Campus.

### The following were present:-

Dr. Gaurav Bhargava, Chairman BOS  
Dr. Ashok Kumar, DAVIET, Kanina  
Dr. Anju Awasthi, BCET, Gurdaspur  
Dr. Neeraj Kumar, CEC, Mohali  
Prof. Ashok Malik, Punjabi University, Patiala  
Prof. R.K. Mahajan, Vice-Chancellor, DAV University, Jalandhar  
Dr. Gurjaspreet Singh, Panjab University, Chandigarh  
Dr. Rupesh Kumar, IKGPTU, Kapurthala  
Dr. Roopa, IKGPTU, Kapurthala  
Dr. Reshu Sanan, IKGPTU, Kapurthala  
Mr. Navdeepak Sandhu, IKGPTU, Kapurthala  
Ms. Maninder Kaur, student alumni, IKGPTU, Kapurthala

### The following members could not attend the meeting:

Prof. Subodh Kumar, GNDU, Amritsar  
Dr. Narinder Singh, IIT, Ropar  
Prof. R.P. Singh Grewal, GNE Ludhiana  
CII Nominee/Industrial Expert  
Prof. A.P. Singh, IKGPTU, Kapurthala

Chairman BOS welcome the members and apprized the members regarding model curriculum issued by the AICTE, New Delhi. All the members deliberated on the agenda. It was unanimously decided the following:

1. The BOS mutually consented to adopt the model syllabi prescribed by AICTE of Chemistry-I (Common to all branches: CE, ME, EE, ECE & CSE) for 1<sup>st</sup> year of B.Tech. courses (Theory and Lab). Copy attached as Annexure-A.


1)        
     


2. The BOS also mutually consented to adopt the elective chemistry papers of B.Tech. Civil Engineering as prescribed by AICTE. Copy attached as Annexure-B.
3. BOS have also decided to adopt Chemistry-I and Chemistry lab for semester-I and semester-II of B.Tech. Chemical Engineering respectively as prescribed by AICTE. (Copy attached as Annexure-C).
4. BOS found the repetition of syllabus in Chemistry-II as that of Chemistry-I in the prescribed syllabus of AICTE. The committee suggested to intimate AICTE at the earliest for rectification/modification of the syllabus which will be implemented as per the AICTE guidelines.
5. BOS also permitted to adopt the changes as prescribed by the AICTE in future too.
6. The BOS member further decided that the modification etc. in near future by AICTE on study scheme and syllabus of B. Tech will be implemented as such for B. Tech courses at IKGPTU.
7. The study scheme for M.Sc. Chemistry, semester 1<sup>st</sup> to 4<sup>th</sup> for the Batch 2018-2019 is approved and attached as Annexure-B.
8. The syllabus of different courses of M.Sc. 1<sup>st</sup> and 2<sup>nd</sup> semester for the batch 2018-2019 is approved as attached Annexure-C.

The meeting ended with the vote of thanks.

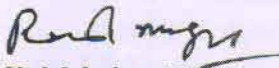
  
Dr. Gaurav Bhargava, Chairman BOS

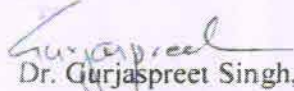
  
Dr. Ashok Kumar, DAVIET, Kanina


  
Dr. Anju Awasthi, BCET, Gurdaspur

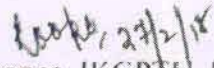
  
Dr. Neeraj Kumar, CEC, Mohali

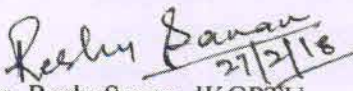
  
Prof. Ashok Malik,  
Punjabi University, Patiala


  
Prof. R.K. Mahajan, VC;  
DAV University, Jalandhar

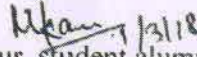
  
Dr. Gurjaspreet Singh,  
Panjab University, Chandigarh

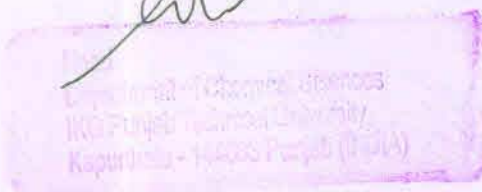
  
Dr. Rupesh Kumar, IKGPTU,

  
Dr. Roopa, IKGPTU, Kapurthala

  
Dr. Reshu Sanan, IKGPTU,

  
Mr. Navdeepak Sandhu, IKGPTU

  
Ms. Maninder Kaur, student alumni, IKGPTU.





Reshu Sanan &lt;reshusanan@gmail.com&gt;

**BOS (Chemical Sciences), IKGPTU, Kapurthala, 10th May 2018**

Reshu Talwar <reshusanan@gmail.com>  
To: Gaurav Bhargava <gauravorganic@gmail.com>

Tue, May 1, 2018 at 11:04 AM

**Dear Sir/ Madam**

A meeting of the Board of Studies in **Chemical Sciences** is scheduled to be held on **10th May, 2018 at 10:30 am** in the conference hall, Deptt. of Academics, 2nd Floor, I.K. Gujral Punjab Technical University, Jalandhar-Kapurthala Highway. The agenda of the meeting is to discuss the syllabus of M.Sc. Chemistry and to discuss any other matter with the permission of the Chair.

You are requested to kindly make it convenient to attend the same. Kindly confirm your participation in the said meeting through e-mail [reshusanan@gmail.com](mailto:reshusanan@gmail.com) or through SMS at 9465884855.

TA& DA / Honorarium will be paid as per the University rules.

With Regards

**Dr Reshu Sanan**  
Assistant Professor (Chemistry)  
Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala-144603  
M: 9465884855

Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala-144603

# IKG Punjab Technical University, Kapurthala

## Minutes of meeting

**Subject: Regarding minutes of meeting of Board of studies (Chemical Sciences) on 10.05.2018**

A meeting of Board of Studies Chemical Sciences was held on May 10<sup>th</sup> 2018 at 10:30 am in the Conference Hall, 2<sup>nd</sup> Floor, Department of Academics, I.K.Gujral Punjab Technical University, Main Campus, Jalandhar-Kapurthala highway, Kapurthala Main Campus.

### The following were present:-

Dr. Gaurav Bhargava, Chairman BOS  
Prof. Subodh Kumar, GNDU, Amritsar  
Prof. A.P. Singh, IKGPTU, Kapurthala  
Dr. Narinder Singh, IIT, Ropar  
Dr. Anju Awasthi, BCET, Gurdaspur  
Dr. Neeraj Kumar, CEC, Mohali  
Dr. Vandana Naithani, IKGPTU, Kapurthala  
Dr. Rupesh Kumar, IKGPTU, Kapurthala  
Dr. Roopa, IKGPTU, Kapurthala  
Dr. Reshu Sanan, IKGPTU, Kapurthala  
Mr. Navdeepak Sandhu, IKGPTU, Kapurthala  
Ms. Maninder Kaur, student alumni, IKGPTU, Kapurthala

### The following members could not attend the meeting:

Prof. R.K. Mahajan, Vice-Chancellor, DAV University, Jalandhar  
Prof. Ashok Malik, Punjabi University, Patiala  
Prof. R.P. Singh Grewal, GNE Ludhiana  
Dr. Gurjaspreet Singh, Panjab University, Chandigarh  
Dr. Ashok Kumar, DAVIET, Kanina  
CII Nominee/Industrial Expert

Chairman BOS welcomed the members and deliberated on the agenda. It unanimously decided the following:

1. The BOS mutually consented to adopt the model syllabi prescribed by AICTE of Chemistry-I (Common to all branches: CE, ME, EE, ECE & CSE) for all other B.Tech. courses (Theory and Lab). Copy attached as Annexure-A.

*Manjit*

*10/5/18*

*10/5/18*

*w. Singh*

*S. K. 10-5-18*

*AK*

*10/5/18*

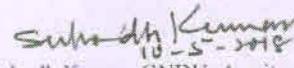
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Stamp: IKG Punjab Technical University, Kapurthala

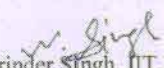
2. The BOS member further decided that the modification etc. in near future by AICTE on study scheme and syllabus of B. Tech will be implemented as such for all B. Tech courses at IKGPTU.
3. The study scheme for M.Sc. Chemistry, semester 1<sup>st</sup> to 4<sup>th</sup> for the Batch 2018 onwards has been modified and approved. Copy attached as Annexure-B.
4. The syllabus of different courses of M.Sc. 1<sup>st</sup> to 4<sup>th</sup> semester for the batch 2018 onwards has been approved. Copy attached as Annexure-C.
5. Course objectives and its outcomes for BTCH101 (Engineering Chemistry) and BTCH102 (Engineering Chemistry Lab) of 2011 have been approved.

The meeting ended with the vote of thanks.


  
Dr. Gaurav Bhargava, Chairman BOS

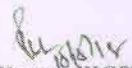
  
Prof. Subodh Kumar, GNDU, Amritsar


  
Prof. A.P. Singh, IKGPTU, Kapurthala

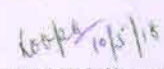
  
Dr. Narinder Singh, IIT, Ropar

  
Dr. Neeraj Kumar, CEC, Mohali


  
Dr. Anju Awasthi, BCET, Gurdaspur


  
Dr. Rupesh Kumar, IKGPTU, Kapurthala

  
Dr. Vandana Naithani, IKGPTU, Kapurthala

  
Dr. Roopa, IKGPTU, Kapurthala

  
Dr. Reshu Sanan, IKGPTU, Kapurthala

  
Mr. Navdeepak Sandhu, IKGPTU, Kapurthala

  
Ms. Maninder Kaur, student alumni, IKGPTU, Kapurthala





Reshu Sanan &lt;reshusanan@gmail.com&gt;

**BOS meeting (Chemical Sciences), IKGPTU, Kapurthala, 27th March 2019**

Reshu Talwar &lt;reshusanan@gmail.com&gt;

Tue, Mar 19, 2019 at 4:33 PM

To: Gaurav Bhargava <gauravorganic@gmail.com>, "Rupesh K. Manaktala" <rupesh.manak@gmail.com>, Roopa <roopa\_noel@yahoo.co.in>, rakesh\_chem@yahoo.com, Simarpreet Singh <spsinghgrewal@gmail.com>, "Dr. Neeraj Kumar" <kumarnk31@gmail.com>, gjpsingh@pu.ac.in, "Dr. Ashok Kumar" <dryadavashok@gmail.com>, subodh\_gndu@yahoo.co.in, Narinder Singh <narinderchem@gmail.com>, Ashok Malik <malik\_chem2002@yahoo.co.uk>, anju awasthi <anjuawasthi707@gmail.com>, Chander Parkash <chander.ptu@gmail.com>, Vandana Naithani <naithanivandana@gmail.com>, anips123@rediffmail.com, Sarwan Singh <ssmailbag@yahoo.co.in>

Cc: Director Office &lt;directormcoffice@gmail.com&gt;

**Dear Sir/ Madam**

A meeting of the Board of Studies in **Chemical Sciences** is scheduled to be held on **Wednesday, 27th March, 2019** at **11:00 am** in the conference hall, Deptt. of Academics, 2nd Floor, I.K. Gujral Punjab Technical University, Jalandhar-Kapurthala Highway. The agenda of the meeting is to discuss the scheme and syllabus of B.Sc. (Honours) Chemistry and to discuss any other matter with the permission of the Chair.

You are requested to kindly make it convenient to attend the same. Kindly confirm your participation in the said meeting through e-mail [reshusanan@gmail.com](mailto:reshusanan@gmail.com) or through SMS at 9465884855.

TA& DA / Honorarium will be paid as per the University rules.

With Regards

**Dr Reshu Sanan****BOS Co-ordinator (Chemical Sciences)****Department of Chemical Sciences****IKG Punjab Technical University****Kapurthala-144603****M: 9465884855**

Reshu Sanan  
BOS Co-ordinator (Chemical Sciences)  
Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala-144603



IKG Punjab Technical University, Kapurthala

**Subject: Minutes of meeting of Board of studies on 27.03.2019**

A meeting of Board of Studies Chemical Sciences was held on March 27<sup>th</sup> 2019 at 11:00 am in the Conference Hall, 2<sup>nd</sup> Floor, Department of Academics, I.K. Gujral Punjab Technical University, Main Campus, Kapurthala.

**The following members were present:-**

- Dr. Gaurav Bhargava, Chairman BOS
- Prof. R.K. Mahajan, Vice-Chancellor, DAV University, Jalandhar
- Prof. Subodh Kumar, GNDU, Amritsar
- Dr. Rupesh Kumar, IKGPTU, Kapurthala
- Dr. Roopa, IKGPTU, Kapurthala
- Dr. Reshu Sanan, IKGPTU, Kapurthala
- Dr. Amit Sarin, Associate Professor, Physics, IKGPTU, Kapurthala
- Dr. Sarabjot Singh Mann, IKGPTU, Kapurthala
- Dr. Priyanka Mahajan, IKGPTU, Kapurthala
- Mr. Navdeepak Sandhu, IKGPTU, Kapurthala
- Ms. Maninder Kaur, student alumni, IKGPTU, Kapurthala

**The following member could not attend the meeting:**

- Prof. Ashok Malik, Punjabi University, Patiala
- Dr. Narinder Singh, IIT, Ropar
- Prof. R.P. Singh Grewal, GNE Ludhiana
- Prof. A.P. Singh, IKGPTU, Kapurthala
- Dr. Anju Awasthi, BCET, Gurdaspur
- Dr. Neeraj Kumar, CEC, Mohali
- Dr. Gurjaspreet Singh, Panjab University, Chandigarh
- Dr. Ashok Kumar, DAVIET, Kanina
- CII Nominee/Industrial Expert

Chairman BOS welcome the members and apprized the members regarding starting of the B.Sc. (Honours) Chemistry in the Department of Chemical Sciences, IKG Punjab Technical University, Kapurthala. All the members deliberated on the agenda. It was unanimously decided the following:

1. The BOS formulated the scheme for the Semester I & II on the lines of UGC recommended scheme for B.Sc. (Honours) and approved.



2. The BOS approved the syllabus for Semester I & II of B.Sc. (Honours) Chemistry (Copy attached as Annexure-A).
3. It is also decided to circulate the scheme and syllabus on e-mail to rest of the members for their valuable suggestions and comments.

The meeting ended with the vote of thanks.

*[Signature]*

Dr. Gaurav Bhargava  
Chairman BOS

*[Signature]*  
Professor (Dr.) Rakesh Kumar Mahajan  
Vice Chancellor, DAV University, Jalandhar

*[Signature]*  
Professor (Dr.) Subodh Kumar  
GNDU, Amritsar

*[Signature]*  
Dr. Rupesh Kumar, IKGPTU, Kapurthala

*[Signature]*  
Dr. Roopa, IKGPTU, Kapurthala

*[Signature]*  
Dr. Reshu Sanan, IKGPTU, Kapurthala

*[Signature]*  
Dr. Amit Sarin, Associate Professor (Physics),  
IKGPTU, Kapurthala

*[Signature]*  
Dr. Priyanka Mahajan, AP (English),  
IKGPTU, Kapurthala

*[Signature]*  
Dr. Sarabjeet Singh Mann, AP (Punjabi),  
IKGPTU, Kapurthala

*[Signature]*  
Mr. Navdeepak Sandhu, IKGPTU, Kapurthala

*[Signature]*  
Ms. Maninder Kaur, Student Alumni,  
IKGPTU, Kapurthala





Reshu Sanan &lt;reshusanan@gmail.com&gt;

## Meeting BOS (Chemical Sciences, Main Campus) scheduled on 30.07.2019 (Tuesday) at 12.00 noon.

Dr. Rupesh Manak &lt;rupesh.manak@gmail.com&gt;

Wed, Jul 24, 2019 at 2:57 PM

To: Gaurav Bhargava <gauravorganic@gmail.com>, deanric@ptu.ac.in, rakesh\_chem@yahoo.com, virinder.singh@bbsbec.ac.in, Narinder Singh <narinderchem@gmail.com>, gjpsingh@pu.ac.in, dinesh.mahajan@thsti.res.in, "Rupesh K. Manaktala" <rupesh.manak@gmail.com>, Roopa <roopa\_noel@yahoo.co.in>, Chander Parkash <chander.ptu@gmail.com>, kaithbs@nitj.ac.in, subodh\_gndu@yahoo.co.in, bkulia23@gmail.com, placements.ptu@gmail.com, bedi.ptu@gmail.com, Reshu Talwar <reshusanan@gmail.com>, rammandhall23@gmail.com, maninderkaur0014@gmail.com  
Cc: directormcoffice@gmail.com, Sarwan Singh <ssmailbag@yahoo.co.in>, deanacad@ptu.ac.in

Dr. Gaurav Bhargava, Chairman BOS

Dr. A.P. Singh, Dean RIC, IKGPTU, Kapurthala

Professor (Dr.) Rakesh Kumar Mahajan, GNDU, Amritsar

Professor (Dr.) B.S. Kaith, Dr. B.R. Ambedkar NIT, Jalandhar

Professor (Dr.) Subodh Kumar, GNDU, Amritsar

Dr. Varinder Singh, BBSBEC, Fatehgarh Sahib

Dr. Narinder Singh, IIT Ropar

Dr. Gurjaspreet Singh

Dr. Dinesh Mahajan, THSTI, New Delhi

Dr. Rupesh Kumar, IKGPTU, Kapurthala

Dr. Roopa, IKGPTU, Kapurthala

Dr. Reshu Sanan, IKGPTU, Kapurthala

Dr. Chander Parkash, IKGPTU, Kapurthala

Dr. Bilash Kulia, Aurigene Discovery Tech. Ltd., Hyderabad

Dy. Director / Assistant Director CR&amp;A, IKGPTU, Kapurthala

Ms. Maninder Kaur, Alumni, IKGPTU, Kapurthala

Mr. Raman Kumar, Student, IKGPTU, Kapurthala

Subject: Meeting BOS (Chemical Sciences, Main Campus) scheduled on 30.07.2019 (Tuesday) at 12.00 noon.

Sir/ Madam

A meeting of the above said members of Board of Studies **Chemical Sciences; Main Campus** is scheduled to be held on **July 30<sup>th</sup> 2019 (Tuesday) at 12:00 noon** in the conference hall, Department of Chemical Sciences, Academic Building-III, GF, I.K. Gujral Punjab Technical University, Jalandhar-Kapurthala Highway.

The agenda of the meeting is to formulate / adopt and approve the scheme and syllabus of M.Sc. (Chemistry) and B.Sc. Honours (Chemistry) running in Department of Chemical Sciences, IKG Punjab Technical University. Any other matter may also be discussed with the permission of the Chair.

Handwritten signature and stamp of the Head, Department of Chemical Sciences, IKG Punjab Technical University.

9/6/2021


Gmail - Meeting BOS (Chemical Sciences, Main Campus) scheduled on 30.07.2019 (Tuesday) at 12.00 noon.

You are requested to participate and contribute through your suggestions. Kindly confirm your participation in the said meeting through e-mail [rupesh.manak@gmail.com](mailto:rupesh.manak@gmail.com) or through SMS at 9465884829.

TA& DA / Honorarium will be paid as per the University rules.

With Regards

**Dr Rupesh Kumar**  
Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala-144603  
M: 9465884829



Head  
Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala - 144603 Punjab (INDIA)

I.K. Gujral Punjab Technical University, Kapurthala  
Board of Studies (Chemical Sciences, Main Campus)  
Minutes of Meetings

A meeting of board of studies (Chemical Sciences, Main Campus) was held on July 30<sup>th</sup> 2019 at 12.00 hrs in the conference room, Ground floor, Department of Chemical Sciences, I.K. Gujral Punjab Technical University Campus.

The following members were present:

Dr. Gaurav Bhargava, Chairman BOS  
Dr. A.P. Singh, Dean RIC, IKGPTU, Kapurthala  
Professor (Dr.) Rakesh Kumar Mahajan, GNDU, Amritsar  
Professor (Dr.) Subodh Kumar, GNDU, Amritsar  
Dr. Virinder Singh, BBSBEC, Fatehgarh Sahib  
Dr. Dinesh Mahajan, THSTI, New Delhi  
Dr. Rupesh Kumar, IKGPTU, Kapurthala  
Dr. Roopa, IKGPTU, Kapurthala  
Dr. Chander Parkash, IKGPTU, Kapurthala  
Dy. Director / Assistant Director CR&A, IKGPTU, Kapurthala  
Ms. Simran Harsh, Alumni, IKGPTU, Kapurthala  
Mr. Raman Kumar, Student, IKGPTU, Kapurthala

The following members were not present:


Professor (Dr.) B.S. Kaith, Dr. B.R. Ambedkar NIT, Jalandhar  
Dr. Narinder Singh, IIT Ropar  
Dr. Gurjaspreet Singh  
Dr. Reshu Sanan, IKGPTU, Kapurthala  
Dr. Bilash Kulia, Aurigene Discovery Tech. Ltd., Hyderabad

Chairman BOS welcome the members and apprized the members regarding the agenda of the meeting. All the members deliberated on the agenda and unanimously decided the following:

1. The committee recommended the adoption of scheme and syllabus of M.Sc. Chemistry (Scheme 2018 onwards) as such after careful analysis of the scheme and syllabus.
2. The committee also recommended the adoption of first year scheme of B.Sc. (Honours) Chemistry (Scheme 2019 onwards) as such.
3. The committee also assigned 16 credits to the project work of 4<sup>th</sup> semester of M.Sc. (Pharmaceutical Chemistry). Committee also recommends to give the detailed evaluation process for the project work in 4<sup>th</sup> semester on the pattern of other sister universities to be incorporated from the Batch 2019-20 onwards.

The meeting ended with the vote of thanks.


  
Dr. Gaurav Bhargava

  
Dr. A.P. Singh

  
Professor R.K. Mahajan

  
Professor Subodh Kumar

  
Dr. Virinder Singh

  
Dr. Dinesh Mahajan

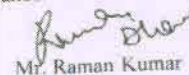
  
Dr. Rupesh Kumar


  
Dr. Roopa

  
Dr. Chander Prakash

  
Dy. Director / Assistant Director CR&A

  
Ms. Simran Harsh

  
Mr. Raman Kumar


  
Head  
Department of Chemical Sciences  
I.K. Gujral Punjab Technical University  
Kapurthala - 141003 Punjab (INDIA)

2. The BOS approved the syllabus for Semester I & II of B.Sc. (Honours) Chemistry (Copy attached as Annexure-A).
3. It is also decided to circulate the scheme and syllabus on e-mail to rest of the members for their valuable suggestions and comments.

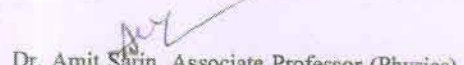
The meeting ended with the vote of thanks.




Dr. Gaurav Bhargava  
Chairman BOS

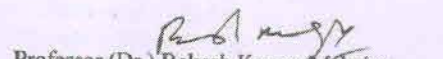
  
Professor (Dr.) Subodh Kumar  
GNDU, Amritsar

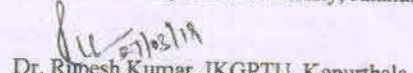
  
Dr. Roopa, IKGPTU, Kapurthala


  
Dr. Amit Sarin, Associate Professor (Physics),  
IKGPTU, Kapurthala


  
Dr. Sarabjeet Singh Mann, AP (Punjabi),  
IKGPTU, Kapurthala

  
Ms. Maninder Kaur, Student Alumni,  
IKGPTU, Kapurthala

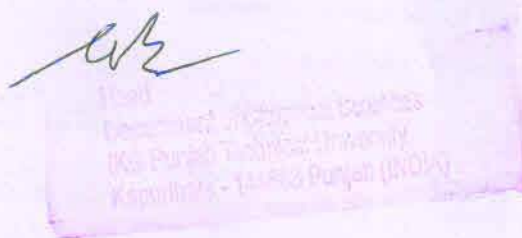
  
Professor (Dr.) Rakesh Kumar Mahajan  
Vice Chancellor, DAV University, Jalandhar

  
Dr. Rupesh Kumar, IKGPTU, Kapurthala

  
Dr. Reshu Sanan, IKGPTU, Kapurthala

  
Dr. Priyanka Mahajan, AP (English),  
IKGPTU, Kapurthala

  
Mr. Navdeepak Sandhu, IKGPTU, Kapurthala





Reshu Sanan &lt;reshusanan@gmail.com&gt;

**BOS meeting (Chemical Sciences), IKGPTU, Kapurthala, Friday, 14th February 2020**

Reshu Talwar &lt;reshusanan@gmail.com&gt;

Thu, Jan 23, 2020 at 11:48 AM

To: Gaurav Bhargava <gauravorganic@gmail.com>, "Rupesh K. Manaktala" <rupesh.manak@gmail.com>, Roopa <roopa\_noel@yahoo.co.in>, rakesh\_chem@yahoo.com, gjpsingh@pu.ac.in, subodh\_gndu@yahoo.co.in, Narinder Singh <narinderchem@gmail.com>, Chander Parkash <chander.ptu@gmail.com>, Vandana Naithani <naithanivandana@gmail.com>, Sarwan Singh <ssmailbag@yahoo.co.in>, Anirudh P Singh <deanric@ptu.ac.in>, Virinder.singh@bbsbec.ac.in, dinesh.mahajan@thisti.res.in, kaithbs@nitj.ac.in, bkuila23@gmail.com, placements.ptu@gmail.com, mrigender bedi <bedi.ptu@gmail.com>

**Dear Sir/ Madam**

A meeting of the Board of Studies in **Chemical Sciences** is scheduled to be held on **Friday, 14th February, 2020** at **11:00 am** in the conference hall, Deptt. of Academics, 2nd Floor, I.K. Gujral Punjab Technical University, Jalandhar-Kapurthala Highway. The agenda of the meeting is to discuss the scheme and syllabus of B.Sc. (Hons. Chemistry) (3rd and 4th Semester) and to discuss any other matter with the permission of the Chair.

You are requested to kindly make it convenient to attend the same. Kindly confirm your participation in the said meeting through e-mail [reshusanan@gmail.com](mailto:reshusanan@gmail.com) or through SMS at 9463725685.

TA& DA / Honorarium will be paid as per the University rules.

With Regards

Dr Reshu Sanan


BOS Co-ordinator (Chemical Sciences)

Department of Chemical Sciences

IKG Punjab Technical University

Kapurthala-144603

M: 9463725685



Head  
Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala - 144603 Punjab (INDIA)

I.K. Gujral Punjab Technical University, Kapurthala  
Board of Studies (Chemical Sciences, Main Campus)  
Minutes of Meetings

A meeting of board of studies (Chemical Sciences, Main Campus) was held on February 14<sup>th</sup> 2020 at 11:00 am in the office of HOD, Ground floor, Department of Chemical Sciences, I.K. Gujral Punjab Technical University Campus.

**The following members were present:**

Dr. Gaurav Bhargava, Chairman BOS  
Dr. A.P. Singh, Dean RIC, IKGPTU, Kapurthala  
Professor (Dr.) Subodh Kumar, GNDU, Amritsar  
Professor (Dr.) B.S. Kaith, Dr. B.R. Ambedkar NIT, Jalandhar  
Dr. Virinder Singh, BBSBEC, Fatehgarh Sahib  
Dr. Dinesh Mahajan, THSTI, New Delhi  
Dr. Rupesh Kumar, IKGPTU, Kapurthala  
Dr. Roopa, IKGPTU, Kapurthala  
Dr. Reshu Sanan, Co-ordinator BOS  
Dr. Chander Parkash, IKGPTU, Kapurthala  
Dr. Hitesh Sharma, IKGPTU, Kapurthala  
Dy. Director / Assistant Director CR&A, IKGPTU, Kapurthala  
Ms. Bhanu Priya, Alumni, IKGPTU, Kapurthala  
Ms. Swati, Student, IKGPTU, Kapurthala

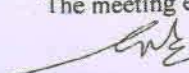
**The following members were not present:**

Professor (Dr.) Rakesh Kumar Mahajan, GNDU, Amritsar  
Dr. Narinder Singh, IIT Ropar  
Dr. Gurjaspreet Singh, PU, Chandigarh  
Dr. Bilash Kulia, Aurigene Discovery Tech. Ltd., Hyderabad

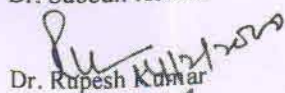
Chairman BOS welcomed the members and apprized the members regarding the agenda of the meeting. All the members deliberated on the agenda and unanimously decided the following:

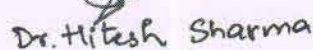
1. The committee recommended the adoption of syllabus of mathematics-II for B.Sc. (Honours) Chemistry [Semester II] as such after careful analysis of the syllabus. [ANN-I]
2. The committee finalised and recommended the adoption of scheme of B.Sc. (Honours) Chemistry [Semester III to VI]. [ANN-II]
3. The detailed syllabus for B.Sc. (Honours) Chemistry [Semester III & IV] was discussed and it was recommended to adopt. [ANN-III]
4. The committee also recommended to adopt the evaluation procedure for the dissertation in semester III and IV of M.Sc. Chemistry as per approved. Accordingly marks distribution has also been incorporated in the already formulated and passed scheme. [ANN-IV]

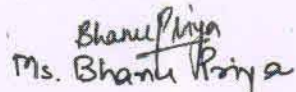
The meeting ended with the vote of thanks.

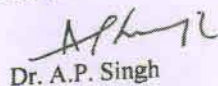
  
Dr. Gaurav Bhargava  
14/2/2020

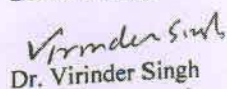
  
Dr. Subodh Kumar

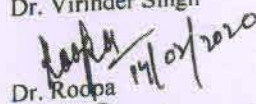
  
Dr. Rupesh Kumar  
14/2/2020

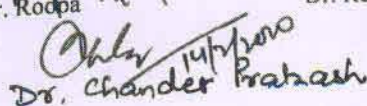
  
Dr. Hitesh Sharma

  
Ms. Bhanu Priya

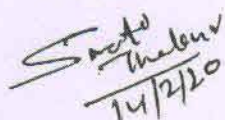
  
Dr. A.P. Singh

  
Dr. Virinder Singh

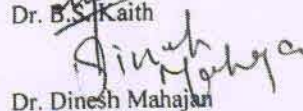
  
Dr. Roopa  
14/02/2020

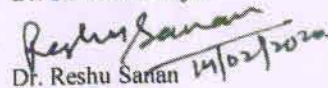
  
Dr. Chander Parkash  
14/2/2020

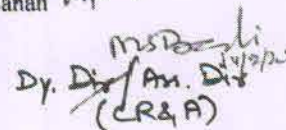
Ms. Swati

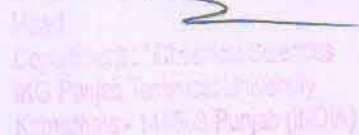
  
14/2/20

  
Dr. B.S. Kaith

  
Dr. Dinesh Mahajan

  
Dr. Reshu Sanan  
14/02/2020

  
Dy. Dir./An. Dir.  
(CR&A)  
14/2/20

  
HOD  
Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala - 141001 Punjab (INDIA)



---

**Regarding Amendment in mom of 14.02.2020 and Approval of same**

---

Reshu Talwar &lt;reshusanan@gmail.com&gt;

Fri, Aug 14, 2020 at 1:28 PM

To: Gaurav Bhargava <gauravorganic@gmail.com>, "Rupesh K. Manaktala" <rupesh.manak@gmail.com>, Roopa <roopa\_noel@yahoo.co.in>, rakesh\_chem@yahoo.com, gjpsingh@pu.ac.in, subodh kumar <subodh\_gndu@yahoo.co.in>, Narinder Singh <narinderchem@gmail.com>, Chander Parkash <chander.ptu@gmail.com>, Vandana Naithani <naithanivandana@gmail.com>, Anirudh P Singh <deanric@ptu.ac.in>, Virinder Singh <Virinder.singh@bbsbec.ac.in>, kaithbs@nitj.ac.in, Bilash Kuila <bkuila23@gmail.com>, placements.ptu@gmail.com, mrigender bedi <bedi.ptu@gmail.com>, dinesh.mahajan@thsti.res.in, Director Office <directormcoffice@gmail.com>

Dear All BOS Members

Greetings of the Day. This is with regard to an amendment in one of the points (Point No. 4) as discussed in minutes of meeting dated 14.02.2020 (copy Attached)

In previous meeting, it was discussed that

**4. The committee also recommended to adopt the evaluation procedure for the dissertation in Semester III and IV of M.Sc. Chemistry as per approved. Accordingly marks distribution has also been incorporated in the already formulated and passed scheme.**

But since the meeting was held on 14.02.2020, the Semester III had been over for Students of M.Sc Chemistry Batch 2018, so the updated scheme could not be implemented for batch 2018 as per examination department.

It is thus here by proposed to amend the point 4 as

**4. The committee recommends to adopt the evaluation procedure for the dissertation in Semester III and IV of M.Sc. Chemistry as per approved notification. Accordingly marks distribution will be incorporated in the already formulated and passed scheme for Batch 2020 onwards. (copy Attached)**

You all are requested to give your **kind approval / suggestions** through email by **20-08-2020**. If You comply to above amendment, **please just leave a reply email writing Approved as your approval is mandatory.**

Thanks and Regards  
Dr. Reshu Sanan  
BOS (coordinator)  
Department of Chemical Sciences  
IKGPTU, Kapurthala.

---

2 attachments





Reshu Sanan &lt;reshusanan@gmail.com&gt;

**BOS (Chemical Sciences) meeting on 11.06.2021 at 11.30am on MicrosoftTeams platform.**

Dr. Rupesh Manak <rupesh.manak@gmail.com> Wed, Jun 9, 2021 at 12:41 PM  
To: Gaurav Bhargava <gauravorganic@gmail.com>, harishchopra@sliet.ac.in, pamita@nith.ac.in, lalitalit64@rediffmail.com, sarbjit.kaur@bbsbec.ac.in, "Dr. Ashok Kumar" <dryadavashok@gmail.com>, principalbcetgurdaspur@yahoo.com, chander.ikgptu@gmail.com, Roopa <roopa\_noel@yahoo.co.in>, Reshu Talwar <reshusanan@gmail.com>, kaithbs@nitj.ac.in, subodh\_gndu@yahoo.co.in, Narinder Singh <narinderchem@gmail.com>, bkulia23@gmail.com, placements.ptu@gmail.com, bedi.ptu@gmail.com, gobindkumar210495@gmail.com, mauryakaran1427@gmail.com  
Cc: deanacad@ptu.ac.in

Dr. Gaurav Bhargava-Professor and Chairman BOS  
Dr. B.S. Kaith, Professor, Dr. B R Ambedkar NIT, Jalandhar  
Dr. Subodh Kumar, Professor, GNDU, Amritsar  
Dr. Harish Kumar Chopra, Professor, SLIET, Longowal  
Dr. Pamita Awasthi, NIT, Hamirpur  
Dr. Lalit Sharma, SBS STC, Ferozepur  
Dr. Narinder Singh, IIT Ropar  
Dr. Sarbjit Kaur Chatha, Associate Professor, BBSBEC, Fatehgarh Sahib  
Dr. Ashok Kumar, Associate Professor, DAVIET, Jalandhar  
Dr. Anju Awathi, Associate Professor, BCET, Gurdaspur  
Dr. Chander Prakash, AP, IKGPTU, Kapurthala  
Dr. Roopa, AP, IKGPTU, Kapurthala  
Dr. Reshu Sanan, AP, IKGPTU, Kapurthala  
Dr. Bilash Kulia, Sr. Scientist, Aurigene Discocoverly Technologies Limited, Hyderabad  
Dy. Director / Assistant Director CR&A  
Mr. Karan Maurya, Student  
Mr. Gobind Kumar, Alumni

**Subject: BOS meeting scheduled on 11.06.2021 at 11.30AM on MicrosoftTeams platform.**

Dear Sir / Madam

The Department of Chemical Sciences is running B.Sc. Honours Chemistry since 2019. The scheme and syllabus for semester I-IV has already been formulated and approved. Scheme and the syllabus of 5<sup>th</sup> and



9/6/2021

Gmail - BOS (Chemical Sciences) meeting on 11.06.2021 at 11.30am on MicrosoftTeams platform.

6<sup>th</sup> semesters are required to be finalized and approved. In this regard, a BOS meeting has been scheduled on 11.06.2021 (Friday) on online **MicrosoftTeams** platform. Link for the meeting is as follows:

<https://bit.ly/3g6PaXu>

(Please download the MicrosoftTeams app in your mobile / laptop for better connectivity. Otherwise you can directly click on the link and join as guest.)

**Main agenda: To finalize and approve the scheme and syllabus of the B.Sc. Honours Chemistry (5<sup>th</sup> and 6<sup>th</sup> semester).**

**Any other agenda: With the approval of the chairman.**

All the worthy members are invited to join the meeting and requested to give their valuable feedback / suggestions to improve the proposed scheme and syllabus.

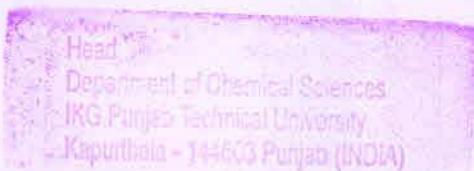
The honorarium will be paid as per the IKGPTU norms.

Regards

Rupesh

Co-ordinator, BOS (Chemical Sciences)

**Dr Rupesh Kumar**  
Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala-144603  
M: 9465884829



I.K. Gujral Punjab Technical University, Kapurthala  
Board of Studies (Chemical Sciences, Main Campus)  
Minutes of Meetings

A meeting of board of studies (Chemical Sciences) was held online on June 11<sup>th</sup> 2021 at 11.30 hrs on Microsoft teams platform.

**The following members were present:**

Dr. Gaurav Bhargava-Professor and Chairman BOS  
Dr. B.S. Kaith. Professor, Dr. B R Ambedkar NIT, Jalandhar  
Dr. Subodh Kumar, Professor, GNDU, Amritsar  
Dr. Harish Kumar Chopra, Professor, SLIET, Longowal  
Dr. Pamita Awasthi, NIT, Hamirpur  
Dr. Lalit Sharma. SBS STC, Ferozepur  
Dr. Narinder Singh, IIT Ropar  
Dr. Sarbjit Kaur Chatha, Associate Professor, BBSBEC, Fatehgarh Sahib  
Dr. Ashok Kumar, Associate Professor, DAVIET, Jalandhar  
Dr. Anju Awathi, Associate Professor, BCET, Gurdaspur  
Dr. Chander Prakash, AP, IKGPTU, Kapurthala  
Dr. Roopa, AP, IKGPTU, Kapurthala  
Dr. Reshu Sanan, AP, IKGPTU, Kapurthala  
Mr. Gobind Kumar, Alumni

**The following members were not present:**

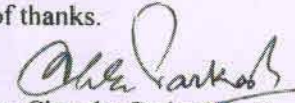
Dr. Bilash Kulia, Sr. Scientist, Aurigene Discocoverly Technologies Limited, Hyderabad  
Dy. Director / Assistant Director CR&A  
Mr. Karan Maurya, Student

Chairman BOS welcome the members and apprized the members regarding the agenda of the meeting. All the members deliberated on the agenda and unanimously decided the following:

The committee discussed the scheme and syllabus of B.Sc. Honours Chemistry (semester 5<sup>th</sup> & 6<sup>th</sup>) thoroughly and finalised (Annexure-I attached). The committee recommended the adoption of finalised scheme and syllabus of B.Sc. Honours Chemistry (semester 5<sup>th</sup> & 6<sup>th</sup>).

The meeting ended with the vote of thanks.

  
Dr. Gaurav Bhargava


  
Dr. Chander Prakash

  
Dr. Rupesh Kumar

  
Dr. Roopa

  
Dr. Reshu Sanan

Note: Members from the outside institutions attended the meeting online and gave their consent for the same.

  
Head  
Department of Chemical Sciences  
IKG Punjab Technical University  
Kapurthala - 141003 Punjab (INDIA)

# I.K.GUJRAL PUNJAB TECHNICAL UNIVERSITY

2.6.2

Estd. Under Punjab Technical University Act, 1996  
(Punjab Act No. 1 of 1997)

Ref. No./IKGPTU/Reg/ 11677

Dated: 03-12-2015

ਪ੍ਰਿੰਸੀਪਲ  
ਸ਼੍ਰੀ ਐਚੀ.ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ।

Subject: **Regarding Credit Based System (CBS).**

ਉਪਰੋਕਤ ਵਿਸ਼ੇ ਦੇ ਸਬੰਧ ਵਿਚ ਆਪ ਜੀ ਦੇ ਖਿਆਲ ਵਿਚ ਲਿਆਇਆ ਜਾਂਦਾ ਹੈ ਕਿ ਆਈ.ਕੇ.ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਵੱਲੋਂ ਦਾਖਲਾ ਸਾਲ 2015-2016 ਤੋਂ ਕਰੈਡਿਟ ਬੇਸਿਡ ਸਿਸਟਮ ਸ਼ੁਰੂ ਕੀਤਾ ਜਾ ਰਿਹਾ ਹੈ। ਇਸ ਸਬੰਧੀ ਲੋੜੀਂਦੀਆਂ ਗਾਈਡਲਾਈਨ, ਰੂਲ ਰੈਗੂਲੇਸ਼ਨਾਂ ਅਤੇ ਸਾਫਟਵੇਅਰ ਯੂਨੀਵਰਸਿਟੀ ਦੀ ਵੈਬਸਾਈਟ ਉੱਪਰ ਅਪਲੋਡ ਕਰ ਦਿੱਤਾ ਗਿਆ ਹੈ, ਜਿਸ ਦਾ ਲਿੰਕ ਨਿਮਨ ਪ੍ਰਕਾਰ ਹੈ। ਆਪ ਜੀ ਨੂੰ ਬੇਨਤੀ ਕੀਤੀ ਜਾਂਦੀ ਹੈ ਕਿ ਦਾਖਲਾ ਸਾਲ 2015-2016 (ਸਹਿਲਾ ਸਮੇਸਟਰ) ਦੇ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਪ੍ਰੀਖਿਆਵਾਂ ਸਬੰਧੀ ਈਵੈਲੂਏਸ਼ਨ ਕਰਨ ਸਬੰਧੀ ਲੋੜੀਂਦੀਆਂ ਹਦਾਇਤਾਂ ਅਤੇ ਸਾਫਟਵੇਅਰ ਯੂਨੀਵਰਸਿਟੀ ਦੀ ਵੈਬਸਾਈਟ ਦੇ ਨਿਮਨ ਲਿੰਕ ਤੋਂ ਡਾਊਨਲੋਡ ਕਰ ਲਿਆ ਜਾਵੇ ਜੀ।

<http://www.ptu.ac.in/ccedit%20based%20system/cbs.pdf>

Handwritten signature and date: 2/12/15  
ਰਜਿਸਟਰਾਰ

ਇਸ ਦਾ ਇਕ ਉਤਾਰਾ

- 1) ਫੀਨ (ਅਕਾਦਮਿਕ) ਜੀ ਨੂੰ ਸੂਚਨਾ ਹਿੱਤ ਭੇਜਿਆ ਜਾਂਦਾ ਹੈ ਜੀ।
- 2) ਕੰਟਰੋਲਰ ਪ੍ਰੀਖਿਆਵਾਂ ਜੀ ਨੂੰ ਸੂਚਨਾ ਅਤੇ ਕਾਲਜਾਂ ਦੀ ਲਾਗਿਨ ਆਈ.ਐਚੀ. ਵਿਚ ਭੇਜਣ ਹਿੱਤ।
- 3) ਡਿਪਟੀ ਰਜਿਸਟਰਾਰ (ਕੰਪਿਊਟਰ) ਨੂੰ ਯੂਨੀਵਰਸਿਟੀ ਦੀ ਵੈਬਸਾਈਟ ਦੇ ਨੋਟਿਸ ਬੋਰਡ ਉੱਪਰ ਅਪਲੋਡ ਹਿੱਤ।

Handwritten signature  
 Head  
 Department of IT Services  
 IKG Punjab Technical University  
 Kapurthala - 147001 Punjab (INDIA)