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1.1.1 Lesson Plans

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Political Science Department

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Name of the Faculty Member: Alia Zaman
Department: Political Science
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Unit I- Groundings 1. Patriarchy a. Sex-Gender Debates b. Public and Private	GE for Hons-I	Women, Power and Politics
August	Theory	Unit I- (contd.) c. Power 2. Feminism, 3. a. Family b. Community c. State	GE for Hons-I	Women, Power and Politics
September	Theory	Unit II- Movements and Issues 1. History of the Women's Movement in India 2. Violence against women	GE for Hons-I	Women, Power and Politics
October	Theory	Unit II- Work and Labour a. Visible and Invisible work b. Reproductive and care work c. Sex work	GE for Hons-I	Women, Power and Politics

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Name of the Faculty Member: Alia Zaman
Department: Political Science
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	1. Approaches to International Relations (a) Classical Realism (Hans Morgenthau) and Neo-Realism (Kenneth Waltz) (b) Neo-Liberalism: Complex Interdependence (Robert O. Keohane and Joseph Nye)	BAP DSC SEM-IV	Introduction to International Relations
February	Theory	(c) Structural Approaches: World Systems Approach (Immanuel Wallerstein) and Dependency School (Andre Gunder Frank) (d) Feminist Perspective (J. Ann Tickner)	BAP DSC SEM-IV	Introduction to International Relations
March	Theory	2. Cold War & Post-Cold War Era (a) Second World War & Origins Cold War (b) Phases of Cold World War: First Cold War Rise and Fall of Detente Second Cold War End of Cold War and Collapse of the Soviet Union (c) Post Cold- War Era and Emerging Centers of Power (European Union, China, Russia and Japan)	BAP DSC SEM-IV	Introduction to International Relations
April	Theory	3. India's Foreign Policy (a) Basic Determinants (Historical, Geo-Political, Economic, Domestic and Strategic) (b) India's Policy of Non-alignment (c) India: An Emerging Power	BAP DSC SEM-IV	Introduction to International Relations

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Name of the Faculty Member: PIA DAVID
Department: POLITICAL SCIENCE. Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	FOR PRACTICAL PRESENTATION MADE ON BOOK, BEYOND AMERICA'S GRASP, STEPHEN P COHEN	Understanding Conflict (Week 1) b. Conflict Management, Conflict Resolution and Conflict Transformation (Week 2) c. Peace Building (Week 3)	6TH SEMESTER B A PROGRAMME	PEACE AND CONFLICT RESOLUTION
February	same as above	Dimensions of Conflict (6 Lectures) a. Ideology (Week 4) b. Economic/Resource Sharing Conflicts (Week 5) c. Socio-Cultural Conflicts (Ethnic, Religious, Gender-based)		
March	same as above	a. Local (Week 7) b. Sub-National (Week 7) c. International (Week 8)		
April	same as above	a. Negotiations: Trust Building (Week 9) b. Mediation: Skill Building; Active Listening (Week 10) c. Track I, Track II & Multi Track Diplomacy (Week 11) d. Gandhian Methods (Week 12)		

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History Department

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Name: Sangeeta Luthra Sharma
Department: History. Year: 2016-17

Month	Theory/ Tutorials	Topics	Course	Paper Name
Jul-August		Confucian Value system China and the Great Divergence Debate	HISTORY OF MODERN CHINA (1840-1960)	DSE XI Revised CBCS
September		Opium Wars and the Unequal Treaty System Taiping and Boxer Movements – Causes, Ideology, Nature. Discussion on debates on GD and opium wars; Comparison between Taiping and Boxer Movements		
October		Self-Strengthening Movement; Hundred Days Reforms of 1898 The Revolution of 1911: Context, Nature and Role of Social Classes Sun Yat-sen (Sun Zhong Shan)- Ideology and Three Peoples Principles Warlordism. Discussions on failures of 19th reform efforts. Transition of China from period of Imperialist control to phase of Nationalism		
November		Origins and Significance; May Fourth Movement of 1919 1921-1927: Formation of the CCP and early activities; Reorganization of the KMT (Nationalist Party); The First United Front 1928-1949: Kiangsi (Jiangxi) Period; Evolution of Maoist Strategy and Revolutionary Measures; the Yenan Phase; Peasant Nationalism and Communist Victory Establishment of the New Order and Mao's Strategy of Development Great Leap Forward: Debates.; Details of Relation between May Fourth movement and the emergence of political parties, details of 1920s political developments Emergence of Mao- different phases of peasant nationalism Topic of the Great Leap Forward was covered in tutorial classes		

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Name: Sangeeta Luthra Sharma
Department: History. Year: 2016-17

Month	Theory/ Tutorials	Topics	Course	Paper code/Name
January		Crisis of Tokugawa *Bakuhan* system The Meiji Restoration; limits to modernization Economic change: Agrarian Settlement; fiscal policies; Capitalism and Industrialisation Popular/People's Rights Movement; gender Meiji Constitution; political parties Discussions revolving around early history of Japan Discussions on varied interpretations on 'democracy' and constitution- ambiguities	HISTORY OF MODERN JAPAN (1868-1950S)	DSE XII
February		History of Korea- The Old Order and Institutional decay: Joseon Korea's relations with China, Japan and western powers Attempts at social, political and economic reform Japan- Militarism and fascism - Nature and significance. Discussion on early history of Korea-comparison with Japan, and how 19th century developments in Japan impacted 20th century politics		
March		Japanese Imperialism 1868-1945; ideology; expansion and conflict American occupation of Japan and post-War reconstruction; Changing nature of Japanese politics- impact on Japan's international positioning		
April		Japan's colonisation of Korea and growth of Korean Nationalism (1910-45) 1910-1919: Consolidation of Japanese power 1919-1931: March First Movement (1919); Saito Reforms of 1920s 1931-1945: War mobilisation; Japanese policy of assimilation; Korean response The Korean War; Impact of Japanese imperialism on Korea and Korea's response – analysis of Korean nationalism		

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Name of the Faculty Member: Dr. Amrita Tulika
Department: History
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Transition from feudalism to capitalism; Problems and theories Colonial state and ideology; Orientalism, Utilitarianism	History Hons. Semester III History Hons. Semester III	Rise of the Modern West (RMW)- 1- Core Course VI History of India- VI (c. 1750- 1857) Core Course X (Shared Paper)
August	Theory	Transition from feudalism to capitalism; Early colonial expansion; Renaissance Colonial ideologies; Colonial Army; Evolution of law and colonial courts	History Hons. Semester III History Hons. Semester III	RMW- 1 HOI- VI
September	Theory	European Reformation 16th century; Economic Development of the 16th century Indigenous and colonial education; Cultural changes and socio- religious reform movements	History Hons. Semester III History Hons. Semester III	RMW- 1 HOI- VI
October	Theory	Price Revolution; Emergence of European state system Debates around gender, caste and community; Popular Resistance	History Hons. Semester III History Hons. Semester III	RMW- 1 HOI- VI

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Name of the Faculty Member: Dr. Amrita Tulika
Department: History
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	Caste, community and nation- regional, linguistic and religious identities; caste identity Social and Political life in Delhi (1803-1857)	History Hons. Semester VI Concurrent Course Semester VI	History of India- VIII (1857- 1950)- Core Course XIII (Shared Paper) Modern Delhi
February	Theory	Early nationalism- Moderates, Extremists, Swadeshi and Revolutionary Movements; Intellectual Foundations of Gandhian Nationalism Ghalib	History hons. Semester VI Concurrent Course Semester VI	HOI- VIII Modern Delhi
March	Theory	Gandhian Nationalism- Rowlatt, Khilafat, Non- co-operation and Quit India; Ambedkar Delhi College and Delhi Renaissance	History Hons. Semester VI Concurrent Course Semester VI	HOI- VIII Modern Delhi
April	Theory	Singh Sabha and the Akali Movement; Peasants and Workers; Tribal Movements Revolt of 1857	History Hons. Semester VI Concurrent Course Semester VI	HOI- VIII Modern Delhi

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Name of the Faculty Member: Dr. Sabina Kazmi
Department: History. 2016-17

Month	Theory/ Practical/ Tutorials	Course	Paper Name	Paper Code	Topics
July – November 2016	Theory	B.A Hons. History (Semester III)	History of India -III (750-1206)		• Sources for Early Medieval Indian History • Debates on Nature of State • Evolution of Political Structures and Institutions, with relevant case studies • Kingship and Legitimization- Various Strategies • Economic and Social Developments • Bhakti Movement and other religious and intellectual traditions
	Theory and Field Work	B.A Hons. History (Semester III)	SEC– Archives & Museums		• History of Development • Types of Archives • Different traditions of preservations and documentations • Students will be encouraged to examine and analyze archival documents and records in the hours assigned for field/ practical work • They will be taken for a visit to National Archives of India
	Theory – General Elective	B.A Hons. History (Semester III)	Medieval Delhi		• We will examine the historical evolution of Delhi under various dynasties • Delhi as an imperial camp and capital city • Key economic, social and cultural developments in Medieval Delhi (12th to 18th Century)

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Name of the Faculty Member: Dr. Sabina Kazmi
Department: History. 2016-17

Month	Theory/ Practical/ Tutorials	Course	Paper Name	Paper Code	Topics
January – April -2017	Theory	B.A Hons. History (Semester IV)	The Rise of Modern West-II		• The 17th Century Crisis – debate, dimensions • Major issues and debates on English Revolutions • Mercantilism, Trade & Empire in 17th -18th c. – case studies of England, France, Spain • American Revolution – Political & Economical Issues • Prelude to Industrial Revolution
	Theory	B.A Hons. History (Semester IV)	History of India (1550 – 1605)		This paper is shared between Dr. T. Suhrawardy & Dr. Sabina Kazmi. We will cover the following themes in our classes and tutorials: - • Sources – Akhlaqi & Vernacular • Evolution of Vijayanagar State • Art & Architecture • Bhakti- concept, literature, different traditions
	Theory	General Elective -II	Modern Delhi		• An overview of Delhi (1803 to 1857) • Literary Culture of Delhi with special focus on Ghalib & his writings • The making of Imperial Delhi • Delhi & Partition • Violence, Dislocation & Expansion in the city

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Economics Department

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Name of the Faculty Member: Poonam Kalra
Department: Economics. Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory(5 per week)	The Matrix Approach to Linear Regression Model: The k- variable regression model, Assumptions of the Classical Linear Regression Model, OLS estimation, Variance-Covariance Matrix, Coefficient of Determination R2	B.A.(Hons.) Economics	Applied Econometrics
	Tutorial(1 per week)	Discussed questions from Gujarati		
August	Theory(5 per week)	Regression Diagnostics ,	B.A.(Hons.) Economics	Applied Econometrics
	Tutorial(1 per week)	Discussed questions from Gujarati		
September	Theory(5 per week)	Advanced Topics in Regression Analysis computing expected values of jointly distributed random variables; covariance and correlation coefficients	B.A.(Hons.) Economics	Applied Econometrics
	Tutorial(1 per week)	Discussed questions from Gujarati Project discussion		
October and November	Theory(5 per week)	Panel Data Models and Estimation techniques	B.A.(Hons.) Economics	Applied Econometrics
	Tutorial(1 per week)	Discussed questions from Gujarati Project discussion		

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Name of the Faculty Member: Poonam Kalra
Department: Economics. Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory(5 per week)	Macroeconomic Policies and Their Impact: Fiscal Policy; trade and investment policy; financial and monetary policies; labour regulation.	B.A.(Hons.)	GE42(Indian Economy II)
	Tutorial(1 per week)	Discussed articles by Balakrishnan, Panda etc.		
February	Theory(5 per week)	Growth; productivity; agrarian structure and technology; capital formation; trade; pricing and procurement	B.A.(Hons.)	GE42(Indian Economy II)
	Tutorial(1 per week)	Discussed articles by Dev, Gulati etc.		
March	Theory(5 per week)	Policies and Performance in Industry Growth; productivity; diversification; small scale industries; public sector; competition policy; foreign investment	B.A.(Hons.)	GE42(Indian Economy II)
	Tutorial(1 per week)	Discussed articles by Nagaraj, Bhattachajea		
April	Theory(5 per week)	Trends and Performance in Services	B.A.(Hons.)	GE42(Indian Economy II)
	Tutorial(1 per week)	Discussed articles by Rupa Chanda		

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Name: Leema Mohan Paliwal
Department: Economics
Year: 2016-17

Month	Theory/Tutorials	Topics	Course	Paper Name/ Code
July	Theory, Tutorials	National Income Accounting	BA Programme	Principles of Macroeconomics
	Theory	Consumer Theory Introduction to Indifference curves and budget constraint	BA Hons	Intermediate Microeconomics I
August	Theory, Tutorials	Simple Keynesian Model	BA Programme	Principles of Macroeconomics
	Theory	Consumer Theory: Utility optimization, demand curves	BA Hons	Intermediate Microeconomics I
September	Theory, Tutorials	Open Economy model for determination of income	BA Programme	Principles of Macroeconomics
	Theory	Substitution and income effect, Slutsky equation, Theory of Revealed preference	BA Hons	Intermediate Microeconomics I
October	Theory, Tutorials	Mont Demand and money supply	BA Programme	Principles of Macroeconomics
	Theory	Production Theory and Cost function	BA Hons	Intermediate Microeconomics I
November	Theory, Tutorials	Liquidity preference and monetary policy	BA Programme	Principles of Macroeconomics
	Theory	Perfect Competition profit maximization, Profit Function	BA Hons	Intermediate Microeconomics I

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Name: Leema Mohan Paliwal
Department: Economics
Year: 2016-17

Month	Theory/Tutorials	Topics	Course	Paper Name/ Code
January	Theory, Tutorials	National Income Accounting	BA Hons. Economics	Introductory Macroeconomics
	Theory, Tutorials	Overview, Theory of Externalities	BA Hons. Economics	Environmental Economics
February	Theory, Tutorials	Money Demand and Money supply	BA Hons. Economics	Introductory Macroeconomics
	Theory, Tutorials	Design of Environmental Policy	BA Hons. Economics	Environmental Economics
March	Theory, Tutorials	Classical Model and Keynesian Model	BA Hons. Economics	Introductory Macroeconomics
	Theory, Tutorials	International environmental problems, measurement of environmental benefits	BA Hons. Economics	Environmental Economics
April	Theory, Tutorials	IS -LM Model and inflation	BA Hons. Economics	Introductory Macroeconomics
	Theory, Tutorials	measurement of environmental benefits, sustainable development	BA Hons. Economics	Environmental Economics

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Name of the Faculty Member: Manjula Singh
Department: Economics. Year: 2016-2017

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory & Tutorials	The labour market Wage determination; wages, prices and employment; natural rate of unemployment; from employment to output	BA (H) Economics	12271302 Intermediate Macroeconomics- I
August	Theory & Tutorials	Aggregate demand and aggregate supply curves Derivation of aggregate demand and aggregate and supply curves; interaction of aggregate demand and supply to determine equilibrium output, price level and employment	BA (H) Economics	12271302 Intermediate Macroeconomics- I
September	Theory & Tutorials	Inflation, unemployment and expectations Phillips curve; adaptive and rational expectations; policy ineffectiveness debate	BA (H) Economics	12271302 Intermediate Macroeconomics- I
October	Theory & Tutorials	Microeconomic foundations Consumption Keynesian consumption function; Fisher's theory of optimal intertemporal choice; lifecycle and permanent income hypotheses; rational expectations and random-walk of consumption expenditure. Investment Determinants of business fixed investment; residential investment and inventory investment. Demand for Money Interest sensitivity of money demand function; Baumol's, Tobin's and Friedman's approach to money demand	BA (H) Economics	12271302 Intermediate Macroeconomics- I

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Name of the Faculty Member: Manjula Singh
Department: Economics. Year: 2016-2017

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory & Tutorials	Nature and scope of Econometrics Simple Linear Regression Model: Two Variable Case ϖ Review of Statistics: normal distribution, chisquare, t- and F-distributions; tests for comparing parameters from two samples. Estimation of model by method of ordinary least squares; Properties of estimators; Goodness of fit; Testing of Hypotheses; Scaling and units of measurement; Confidence intervals; Gauss Markov Theorem; Forecasting	BA (H) Economics	12271403 Introductory Econometrics
February	Theory & Tutorials	Multiple Linear Regression Model ϖ Estimation of parameters; Properties of OLS estimators; Goodness of fit- R2 and Adjusted R2; Partial regression coefficients; ϖ Testing Hypotheses: Individual and Joint;	BA (H) Economics	12271403 Introductory Econometrics
March	Theory & Tutorials	ϖ Functional Forms of Regression Models; ϖ Qualitative (dummy) independent variables Violations of Classical Assumptions: Consequences, Detection and Remedies ϖ Multicollinearity	BA (H) Economics	12271403 Introductory Econometrics
April	Theory & Tutorials	Heteroscedasticity; ϖ Auto-correlation Specification Analysis ϖ Omission of a relevant variable; ϖ Inclusion of irrelevant variable; ϖ Tests of specification	BA (H) Economics	12271403 Introductory Econometrics

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Name: Saumaly Ghosh
Department: Economics
Academic Year: 2016-2017

Month	Theory/Tutorials	Topics	Course	Paper code/ Name
July	Theory+Tutorials	Absolute and Comparative Advantage theories	BA (H) economics semester V	International Economics
	Theory+Tutorials	Growth and development	BA Prog. Semester V	Economic Development and Policy in India-I
August	Theory+Tutorials	Hecksher Ohlin Model; Ricardian model	BA (H) economics semester V	International Economics
	Theory+Tutorials	Readings on growth and development	BA Prog. Semester V	Economic Development and Policy in India-I
September	Theory+Tutorials	Tariffs and trade policy	BA (H) economics semester V	International Economics
	Theory+Tutorials	Readings on education	BA Prog. Semester V	Economic Development and Policy in India-I
October	Theory+Tutorials	Regulation and trade policy	BA (H) economics semester V	International Economics
	Theory+Tutorials	Readings on health	BA Prog. Semester V	Economic Development and Policy in India-I

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Name: Saumaly Ghosh
Department: Economics
Academic Year: 2016-2017

Month	Theory/Tutorials	Topics	Course	Paper code/ Name
January	Theory+Tutorials	Introduction to environmental economics; Sustainable development; Welfare theorems	BA(H) economics VIth semester	Environmental Economics
	Theory+Tutorials	Introduction to the budget	BA(H) economics IVth semester	Contemporary economic issues
February	Theory+Tutorials	Coase theorem and property rights	BA(H) economics VIth semester	Environmental Economics
	Theory+Tutorials	Readings on the Finance commission; project topic selection and discussion	BA(H) economics IVth semester	Contemporary economic issues
March	Theory+Tutorials	Regulation ; prescriptive regulations and economic incentives	BA(H) economics VIth semester	Environmental Economics
	Theory+Tutorials	Chapters from Economic Survey	BA(H) economics IVth semester	Contemporary economic issues
April	Theory+Tutorials	Environmental pricing	BA(H) economics VIth semester	Environmental Economics
	Theory+Tutorials	Chapters from Economic Survey	BA(H) economics IVth semester	Contemporary economic issues

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English Department

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Name of the Faculty Member: Themeem T
Department: English
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	1) Introduction to the Course. 2) Poetry Passage to India by Walt Whitman, 'O Captain! My Captain', by Walt Whitman	B A Hons II Year	American Literature
August	Theory and Tutorial	"The Prologue" by Anne Bradstreet	B A Hons II Year	American Literature
September	Theory	"Crow Testament" and "Evolution" by Sherman Alexie	B A Hons II Year	American Literature
October	Theory	Tennessee Williams The *Glass Menagerie*	B A Hons II Year	American Literature

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Name of the Faculty Member: Themeem T.
Department: English
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	Introduction. Manto, 'Toba Tek Singh '	III BA Hons	Partition Literature
February	Theory	"A Leaf in A storm" by Lalithambika Andarjanam	III BA Hons	Partition Literature
March	Theory	"Alam's Own House" by Dibyendu Palit	III BA Hons	Partition Literature
April	Theory	*Basti* by Intizar Hussain	III BA Hons	Partition Literature

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Name of the Faculty Member: **Ann Susan Aleyas**
Department: **English**
Year: **2016-17**

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	Introduction to Women's Writing. Introduction to French and American Feminist Theory Feminism in India Introduction to Colour Purple	B.A.English (Hons) – III (Semester V)	Women's Writing
February	Theory	Close reading and analysis of Alice Walker's *Colour Purple* Thematic Discussion of Alice Walker's *Colour Purple* Introduction to Womanism Discussion on readings by bell hooks, Patricia Hill Collins and additional short stories of Alice Walker	B.A.English (Hons) – III (Semester V)	Women's Writing
March	Theory	Close reading, discussion and thematic analysis of Charlotte Perkin Gilman's "Yellow Wallpaper". Close reading, discussion and thematic analysis of Katherine Mansfield's "The Yellow Wallpaper". Student Presentations of various themes of "The Yellow Wallpaper" Close reading and discussion of Katherine Mansfield's "Bliss"	B.A.English (Hons) – III (Semester V)	Women's Writing
April	Theory	Close reading, analysis and discussion of Mahasweta Devi's "Draupadi" Student presentations on Mahasweta Devi's *Breast S*tories and secondary readings Revision of all the texts in the syllabus	B.A.English (Hons) – III (Semester V)	Women's Writing

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Philosophy Department

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Name of the Faculty Member: **Dr Silika Mohapatra**
Department: **Philosophy**
Year: **2016-17**

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July		Descartes/Spinoza Madhyamakakarika/Causation	BAH Philo III Sem BAH Philo V Sem	History of Western Philosophy Texts of Indian Philosophy
August		Leibniz/Locke Madhyamakakarika/Causation	BAH Philo III Sem BAH Philo V Sem	History of Western Philosophy Texts of Indian Philosophy
September		Berkeley/Hume Madhyamakakarika/Nirvana	BAH Philo III Sem BAH Philo V Sem	History of Western Philosophy Texts of Indian Philosophy
October		Kant Madhyamakakarika/Nirvana	BAH Philo III Sem BAH Philo V Sem	History of Western Philosophy Texts of Indian Philosophy

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Name of the Faculty Member: **Dr Silika Mohapatra**
Department: **Philosophy**
Year: **2016-17**

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January		Introduction Descartes/Spinoza	BAH Philo IV Sem BAP IV Sem	Western Philo Western Philosophy
February		Berkeley Leibniz/Locke	BAH Philo IV Sem BAP IV Sem	Western Philo Western Philosophy
March		Hume Berkeley/Hume	BAH Philo IV Sem BAP IV Sem	Western Philo Western Philosophy
April		Kant Kant	BAH Philo IV Sem BAP IV Sem	Western Philo Western Philosophy

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Sanskrit Department

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Name: A.D. Mathur
Department: Sanskrit
Year: 2016-17

Month	Theory/Tutorials	Topics	Course	Paper code/ Name
July	Theory and Tutorials	Nitishatakam	BA (H) I BA (H) II BA (H) III BA (H) III	C -1 Sanskrit Poetry C -7 Indian Social Institutions and Polity C -11 Vedic Literature DSE – 1 Indian System of Logic and Debate
August	Theory and Tutorials	Nitishatakam	BA (H) I BA (H) II BA (H) III BA (H) III	C -1 Sanskrit Poetry C -7 Indian Social Institutions and Polity C -11 Vedic Literature DSE – 1 Indian System of Logic and Debate
September	Theory and Tutorials	Nitishatakam	BA (H) I BA (H) II BA (H) III BA (H) III	C -1 Sanskrit Poetry C -7 Indian Social Institutions and Polity C -11 Vedic Literature DSE – 1 Indian System of Logic and Debate
October	Theory and Tutorials	Nitishatakam	BA (H) I BA (H) II BA (H) III BA (H) III	C -1 Sanskrit Poetry C -7 Indian Social Institutions and Polity C -11 Vedic Literature DSE – 1 Indian System of Logic and Debate

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Name: A.D. Mathur
Department: Sanskrit
Year: 2016-17

Month	Theory/Tutorials	Topics	Course	Paper code/ Name
January	Theory and Tutorials	**Gītā**: Cognitive and emotive apparatus Unit: I Hierarchy of *indriya, manas, buddhi* and *ātman* Role of the **ā**tman Mind as a product of prak**ṛ**ti Properties of three gu**ṇ**as and their impact on the mind	BA Hons. I BA Hons. II BA (H) III	C-4 Self Management in the Gita C – 10 Sanskrit and World Literature C -13 Indian Ontology and Epistemology
February	Theory and Tutorials	**Gītā**: Controlling the mind Confusion and conflict in mind Nature of conflict Causal factors – Ignorance; Rajogu**ṇ**a Means of controlling the mind Meditation–difficulties in procedure Balanced life, Diet control, Physical, mental discipline.	BA Hons. I BA Hons. II BA (H) III	C-4 Self Management in the Gita C – 10 Sanskrit and World Literature C -13 Indian Ontology and Epistemology
March	Theory and Tutorials	Means of conflict resolution in **Gītā** Importance of knowledge Clarity of **buddhi.** Process of decision making Control over senses Surrender of **kart**ṛ**bhāva;** Desirelessness Putting others before self	BA Hons. I BA Hons. II BA (H) III	C-4 Self Management in the Gita C – 10 Sanskrit and World Literature C -13 Indian Ontology and Epistemology
April	Theory and Tutorials	**Gītā**: Self-management through devotion Surrender of ego Abandoning frivolous debates Acquisition of moral qualities	BA Hons. I BA Hons. II BA (H) III	C-4 Self Management in the Gita C – 10 Sanskrit and World Literature C -13 Indian Ontology and Epistemology

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Hindi Department

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Name of the faculty – Dr. Ashutosh Shukla
Department – Hindi. Year – 2016-17

Month	Theory/Tutorial	Topics	Course	Paper Code/Name
July	Theory & Tutorial	Bhasik sampresan - swaroop aur sidhant	BA Programme	AECC-Hindi Bhasha or sampresan/72052 802
August	Theory & Tutorial	Sampresan ke prakar	BA Programme	AECC-Hindi Bhasha or sampresan/72052 802
Septembe	Theory & Tutorial	Sampresan ke madhyam	BA Programme	AECC-Hindi Bhasha or sampresan/72052 802
October	Theory & Tutorial	Vyaktitya or prabhavi bhasik sampresan	BA Programme	AECC-Hindi Bhasha or sampresan/72052 802

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Name of the faculty member – Dr. Ashutosh Shukla
Department – Hindi. Year – 2016-17

Month	Theory/Tutorial	Topics	Course	Paper Code/Name
January	Theory & Tutorial	Hindi Bhasha ka parichay, udbhav aur vikas	BA Programme	MIL- Hindi A/ 62051412
		Kala vidha ke roop me cinema	BA Programme- GE	Hindi cinema aur uska adhyan/62055634
February	Theory & Tutorial	Hindi sahitya ka itihas	BA Programme	MIL- Hindi A/ 62051412
		Hindi cinema udhabhv aur vikas	BA Programme- GE	Hindi cinema aur uska adhyan/62055634
March	Theory & Tutorial	Kabir,Bhusan, Bihari	BA Programme	MIL- Hindi A/ 62051412
		Cinema me camere ki bhumika	BA Programme- GE	Hindi cinema aur uska adhyan/62055634
April	Theory & Tutorial	Adhunik Hindi kabita - Prasad, Nagarjun	BA Programme	MIL- Hindi A/ 6205
		Nai takniki aur cinema - sambhawanaye aur chunatia	BA Programme- GE	Hindi cinema aur uska adhyan/62055634

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Urdu Department

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Name of the Faculty Member: Dr. Shamim Ahmed
Department: Urdu & Persian
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Sawere Jo Kal Aankh Meri *kuli by Pitrus Bukhari* Ghazals By *Hasrat Mohani*	B A Programme I year	AECC Urdu B 72142802
August	Theory	Lajwanti by *Bedi* Ghazals By *Fani* Chand Aur Taare by *Iqbal*	B A Programme I year	AECC Urdu B 72142802
September	Theory	Qual E Faisal By *Azad* Naya Qanoon by *Manto* Toota hua Sitara by *Sardar Jafri*	B A Programme I year	AECC Urdu B 72142802
October	Theory	Ghazal By *Majrooh* Kisaan By *Josh*	B A Programme I year	AECC Urdu B 72142802
November	Theory	Qalandar By *Qurrat*	B A Programme I year	AECC Urdu B 72142802

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Name of the Faculty Member: Dr. Shamim Ahmed
Department: Urdu & Persian
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	Achhi Kitab By *Abdul Haq* Ghazal By *Dagh* Ek Khat by *Azad*	B A Programme I year	Core MIL Urdu B 62141116
February	Theory	Barq E Kalisa By *Akbar* Ghazal by *Shaad* Diya Salai By *Nizami*	B A Programme I year	Core MIL Urdu B 62141116
March	Theory	Saaqi Naama by *Iqbal* Ghazal by *Majrooh* Ghazal by *Firaq*	B A Programme I year	Core MIL Urdu B 62141116
April	Theory	Kutte by *Pitrus Bukhari*	B A Programme I year	Core MIL Urdu B 62141116

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Chemistry Department

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Name of the Faculty Member: Shabnam Johry
Department: Chemistry
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	**Theory and Practicals**	Amino acids, Peptides and their classification. α-Amino Acids – Synthesis 1.Acetylation of one of amines and phenols 2.Extraction of Caffeine from tea leaves	Chemistry Honours Semester-V 1.Chemistry Honours Semester-III 2.Chemistry Honours Semester-III	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV 1. C VI: ORGANIC CHEMISTRY II 2. SEC: PHARMACEUTICAL CHEMISTRY
August	**Theory and Practicals**	Zwitterions, pKa values, isoelectric point and electrophoresis; Study of peptides: determination of their primary structure-end group analysis. Synthesis of peptides using N-protecting, C-protecting and C-activating groups, Solid-phase synthesis. Study of the action of salivary amylase on starch under optimum conditions. Hydrolysis of esters.	Chemistry Honours Semester-V Chemistry Honours Semester-V 2.Chemistry Honours Semester-III	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV 1.CHEMISTRY - C XI: ORGANIC CHEMISTRY IV 2.C VI: ORGANIC CHEMISTRY II
September	**Theory and Practicals**	Primary, secondary and tertiary structures of proteins, Denaturation of proteins.	Chemistry Honours Semester-V	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV

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		Introduction, classification and characteristics of enzymes. Salient features of active site of enzymes. Mechanism of enzyme action (taking chymotrypsin as an example), factors affecting enzyme action, coenzymes and cofactors (NAD,FAD), specificity of enzyme action (including stereospecificity) 1.Saponification value of the given oil. 2.Preparation of Aspirin.	1.Chemistry Honours Semester-V 2. Chemistry Honours Semester-III	1.CHEMISTRY - C XI: ORGANIC CHEMISTRY IV 2. SEC: PHARMACEUTICAL CHEMISTRY
October	**Theory and Practicals**	Enzyme inhibitors and their importance. Introduction to oils and fats; common fatty acids present in oils and fats, Hydrogenation of fats and oils, Saponification value, acid value, iodine number. Reversion and rancidity. 1.Preparation of S-Benzylisothiouronium salt of one each of water soluble and water insoluble acids.	Chemistry Honours Semester-V 1. Chemistry Honours Semester-III	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV 1.C VI: ORGANIC CHEMISTRY II

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Name of the Faculty Member: Shabnam Johry
Department: Chemistry
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	**Theory and Practicals**	Aromatic Hydrocarbons, Alkyl halides 1. Qualitative analysis of unknown organic compounds containing monofunctional groups 2. Qualitative analysis of unknown organic compounds containing simple functional groups	BSc Program (with Chemistry) Semester-II Chemistry Honours Semester-VI Chemistry Honours Semester-IV	Chemical Energetics, Equilibria & 4 Functional Group Organic Chemistry-I C XIV: ORGANIC CHEMISTRY V C IX: ORGANIC CHEMISTRY III
February	**Theory and Practicals**	Aryl Halides, Alcohols, Diols 1. Qualitative analysis of unknown organic compounds containing monofunctional groups 2. Qualitative analysis of unknown organic compounds containing simple functional groups 3. Detection of extra elements.	BSc Program (with Chemistry) Semester-II Chemistry Honours Semester-VI Chemistry Honours Semester-IV Chemistry Honours Semester-II	Chemical Energetics, Equilibria & 4 Functional Group Organic Chemistry-I C XIV: ORGANIC CHEMISTRY V C IX: ORGANIC CHEMISTRY III C III: ORGANIC CHEMISTRY I

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March	**Theory and Practicals**	Phenols, Ethers 1. Qualitative analysis of unknown organic compounds containing monofunctional groups 2. Qualitative analysis of unknown organic compounds containing simple functional groups 3. Detection of extra elements.	BSc Program (with Chemistry) Semester-II Chemistry Honours Semester-VI Chemistry Honours Semester-IV Chemistry Honours Semester-II	Chemical Energetics, Equilibria & 4 Functional Group Organic Chemistry-I C XIV: ORGANIC CHEMISTRY V C IX: ORGANIC CHEMISTRY III C III: ORGANIC CHEMISTRY I
April	**Theory and Practicals**	Aldehydes and Ketones Qualitative analysis of unknown organic compounds containing bifunctional groups. Qualitative analysis of unknown organic compounds containing simple functional groups. Determination of boiling point of liquid compounds	BSc Prog (With Chemistry, Semester II) Chemistry Honours Sem-VI Chemistry Honours Sem-IV Chemistry Honours, Sem II	

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Name of the Faculty Member: Dr. Vibha Sharma
Department: Chemistry Year: 2016-2017 Odd Semester

Month	Theory/ Practical	Topics	Course	Paper code/ Name
July - November	Theory	• Transition Elements • Lanthanides and Actinides • Coordination Chemistry • Reaction Kinetics	B.Sc. Hons. Chemistry Semester V	CHHT 511: Inorganic Chemistry - IV; 217501
July - November	Theory	Section A: • Transition Elements • Lanthanides and Actinides • Coordination Chemistry	B.Sc. Prog. with Chemistry Semester V	CHPT-505 Chemistry-V Chemistry of d-Block elements, Quantum Chemistry and Spectroscopy; 217561
July - November	Practical	• Titrimetric Analysis • Acid-Base Titrations • Oxidation-Reduction Titrimetry	B.Sc. Hons. Chemistry Semester I	LAB: Inorganic Chemistry-I: Atomic Structure & Chemical Bonding; 32171101
July - November	Practical	• Gravimetric Analysis • Complex Preparations	B.Sc. Hons. Chemistry Semester V	LAB: CHHT 511: Inorganic Chemistry -IV; 217501
July - November	Practical	• Gravimetric Analysis • Complexometric Titrations • Colorimetry • Reaction kinetics	B.Sc. Prog. with Chemistry Semester V	LAB: DSE CHPT-505 Chemistry-V Chemistry of d-Block elements, Quantum Chemistry and Spectroscopy; 217561

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Name of the Faculty Member: Dr. Vibha Sharma
Department: Chemistry Year: 2016-2017 Even Semester

Month	Theory/ Practical	Topics	Course	Paper code/ Name
January - April	Theory	• Unit 1 Coordination Chemistry: • Unit 4 Inorganic Reaction Mechanism	B.Sc. Hons. Chemistry Semester IV	C-VIII Inorganic Chemistry-III: Coordination Chemistry, 32171401
January - April	Theory	• Unit I: Theoretical principles and Chemistry involved in qualitative analysis	B.Sc. Hons. Chemistry Semester VI	CHHT-615 Inorganic Chemistry-V, 217601
January - April	Practical	• Gravimetric Analysis • Inorganic reparations • Properties of Complexes - Spectrophotometry	B.Sc. Hons. Chemistry Semester IV	LAB: C-VIII Lab Inorganic Chemistry-III: Coordination Chemistry; 32171401
January - April	Practical	• Qualitative Analysis - Salt mixture analysis	B.Sc. Hons. Chemistry Semester VI	LAB: CHHT-615 Inorganic Chemistry-V, 217601

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Name of the Faculty Member: Dr. Jaspreet Kaur
Department: Chemistry
Year: 2016-2017

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Introduction to analytical chemistry and its interdisciplinary nature,	B.Sc (H) IIyr	Basic Analytical Chemistry
	Practical	To study the use of phenolphthalein in trap cases		
August	Theory	Concept of sampling. Significant figures. Presentation of experimental data and results. Importance of accuracy, precision and sources of error in analytical measurements	B.Sc (H) IIyr	Basic Analytical Chemistry
	Practical	Determination of pH, acidity and alkalinity of a water sample Determination of dissolved oxygen (DO) of a water sample		
September	Theory	Analysis of soil and water,	B.Sc (H) IIyr	Basic Analytical Chemistry
	Practical	Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration Determination of pH of soil samples.		
October	Theory	chromatography	B.Sc (H) IIyr	Basic Analytical Chemistry
	Practical	Paper chromatographic separation of mixture of metal ion, Determination of ion exchange capacity		

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Name of the Faculty Member: Dr. Jaspreet Kaur
Department: Chemistry
Year: 2016-2017

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	Polynuclear and heteronuclear aromatic compounds	B.Sc (PS) IIIyr	ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY
February	Theory	Structure elucidation of naphthalene, preparation and properties of naphthalene and anthracene	B.Sc (PS) IIIyr	ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY
March	Theory	Properties of the Duran, Pyrrole with reference to electrophilic and nucleophilic substitution:, Thiophene, and Pyridine	B.Sc (PS) IIIyr	ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY
April	Theory	Properties of the Duran, Thiophene, and Pyridine reference to electrophilic and nucleophilic substitution:,	B.Sc (PS) IIIyr	ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY

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Name of the Faculty Member: Dr. Jyotirmoy Maity
Department: Chemistry
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Pharmaceutical Chemistry (T,P)	Synthesis and application of medicines	IIC	32173909
	Organic Chemistry (T)	Reaction intermediates	I PS	42171103
	Organic Chemistry (T,P)	Biomolecules	IIIC	217503
	Environmental Studies (T)	Ecosystem, Biodiversity, Natural Resources, Pollution	I Maths	72182801
August	Same as above			
September	Same as above			
October	Same as above			

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Name of the Faculty Member: Dr. Jyotirmoy Maity
Department: Chemistry
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Organic Chemistry (T,P)	UV, IR Spectroscopy	III PS	42177926
	Organic Chemistry (T,P)	Heterocyclic Chem	IIC	32171402
	Environmental Studies (T)	Ecosystem, Biodiversity, Natural Resources, Pollution	I History	72182801
February	Same as above			
March	Same as above			
April	Same as above			

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Physics Department

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Name of the Faculty Member: Sanjay Kumar
Department: Physics
Year: 2016-17

Odd Semester	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July-Nov	Theory	All topics in the BSc(H) V Semester Atomic and Molecular Physics paper were covered	BSc(H) V Semester	Atomic and Molecular Physics
July-Nov	Laboratory	BSc(P) III Sem Physics Laboratory Syllabus. Oversaw and instructed students' in laboratory and checked their reports.	BSc(P) III Semester	Thermal Physics Laboratory
July -Nov	Laboratory	BSc(P) I Sem Physics Laboratory Syllabus. Students were given lectures on (i) Significant Figures and (2) Errors and Uncertainty in experiments. Lecture notes for these were also given to students.	BSc(P) I Semester	Physics Laboratory (Mechanics)

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Name of the Faculty Member: Sanjay Kumar
Department: Physics
Year: 2016-17

Even Semester	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
Jan-April 2017	Theory	All topics in the University Syllabus for Electromagnetic Theory (BSc(H) V Semester) were covered. Beyond Syllabus topics covered were (i) Relativistic Lorentz transformations of Electric and Magnetic Fields and Maxwell's Equations (ii) (ii) Conservation of Angular momentum in induction phenomenon (as discussed in Feynman Vol 2)	BSc(H) V Semester	Electromagnetic Theory
Jan-April 2017	Laboratory	BSc(P) II Semester Physics Laboratory syllabus was covered. Students were given instructions to do different electricity experiments. Their work in the lab was supervised and reports checked.	BSc(P) II Semester	BSc(P) II Semester Physics Lab
Jan –April 2017	Laboratory	BSc(H) Physics IV Sem Modern Physics Laboratory Syllabus was covered. Besides overseeing students' work in the lab and checking their reports, a lecture on the phenomenon of Quantum Tunneling was given and its role in functioning of Tunnel Diode explained.	BSc(H) Physics IV Semester	BSc(H) Physics IV Semester Modern Physics Lab

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Name of the Faculty Member: Abhinav Gupta
Department: Physics. Year: 2016-17

Month	Theory/ Practical	Topics	Course	Paper Name
July	**Theory: Mechanics** **Practicals: MP2 Computational Lab** **Quantum Mechanics Lab**	**Fundamentals of Dynamics:** Newton's Laws, Variable mass systems, Dynamics of System of particles. **Work and Energy:** Work Energy Theorem, Conservative and non- conservative forces, Potential Energy. Interpolation: Newton, Laplace and Chebyshev Interpolation. Discretizing Schrodinger Equation. Solution to one-dimensional eigenvalue problems through matrix diagonalization.	BSc (H) Physics	
August	**Theory: Mechanics** **Practicals: MP2 Lab** **QM Lab**	**Collisions:** Elastic and Inelastic Collisions, CM and Lab frames. **Rotational Dynamics:** Angular momentum of a particle and system of particles. Torque. Principle of conservation of angular momentum. Fixed axis rotation. Solving first and second order Differential Equations. Time evolution problems through matrix diagonalization. QM Scattering.	BSc (H) Physics	
September	**Theory: Mechanics** **Practicals: MP2 Lab** **QM Lab**	**Gravitation and Central Force Motion:** Law of gravitation. Gravitational potential Energy. **Motion of a particle under a central force field:** Two-body problem. Kepler"s Laws. **Oscillations:** Differential equation of driven, damped Harmonic Oscilaltor. Kinetic, Potential and Total Mechanical Energy. Transients, resonance and Quality Factor. Generating Special Functions. Legendre Polynomials. Solving three-dimensional eigenvalue problems through matrix diagonalization.	BSc (H) Physics	
October	**Theory: Mechanics** **Practicals: MP2 Lab** **QM Lab**	**Non-Inertial Systems:** Galilean transformations. Inertial and Non-inertial frames and fictitious forces. Uniformly rotating frame. Centrifugal and Coriolis Forces. **Special Theory of Relativity:** Michelson-Morley Experiment. Postulates of Special Theory of Relativity. Lorentz Transformations. Simultaneity, Length contraction, Time dilation. Relativistic transformation of velocity, acceleration, frequency and wave number. Mass-energy Equivalence. Relativistic Doppler effect. Relativistic Kinematics. Transformation of Energy and Momentum. Solutions of system of Linear Equations. Solving Eigenvalue Problems using the Shooting Method.	BSc (H) Physics	

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Name of the Faculty Member: Abhinav Gupta
Department: Physics. Year: 2016-17

Month	Theory/ Practical	Topics	Course	Paper Name
January	**Theory:** **Statistical Mechanics** **Practicals:** **Statistical Mechanics Lab** **MP3 Lab**	Classical Statistics. Macrostate, Microstate and Phase Space. Entropy and Thermodynamic Probability. Boltzmann Distribution, Partition Function. Applications to Ideal Gas. Two state systems and Negative Temperatures. Thermal equilibrium of a system of hard disks: approach to equilibrium, entropy, phase transitions, Maxwell Distribution. The Dirac Delta Function. Fourier Series.	BSc (H) Physics	
February	**Theory:** **Statistical Mechanics** **Practicals:** **Statistical Mechanics Lab** **MP3 Lab**	Bose-Einstein Statistics. Bose-Einstein Distribution, Thermodynamic functions of strongly degenerate Bose gas. Bose Einstein Condensation. Radiation as a Bose Gas. The Lennard Jones Gas. The Verlet Algorithm, conservation of energy. The method of least squares.	BSc (H) Physics	
March	**Theory:** **Statistical Mechanics** **Practicals:** **Statistical Mechanics Lab** **MP3 Lab**	Fermi-Dirac Statistics. Fermi-Dirac Distribution. Thermodynamic Functions of a strongly degenerate Fermi Gas. Electrons in a metal. White Dwarf Stars and the Chandrasekhar Limit. Equilibrium Distributions for a Lennard Jones system. The Maxwell Speed Distribution. Partial Differential Equations. The Wave Equation, Heat Conduction Equation, Laplace's Equation.	BSc (H) Physics	
April	**Theory:** **Statistical Mechanics** **Practicals:** **Statistical Mechanics Lab** **MP3 Lab**	Theory of Radiation. Properties of Thermal Radiation. Stefan-Boltzmann Law. Wien's Law. Saha's Ionization Potential. Black Body radiation and Planck's Law. Phase transitions in a Lennard Jones system. Fast Fourier Transform.	BSc (H) Physics	

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Name of the Faculty Member: Dr. Annu Malhotra
Department: Physics. Year: 2016-17

Month	Theory/ Practicals	Topics	Course	Paper Name
July	Theory	Fourier Series: Periodic functions. Orthogonality of sine and cosine functions, Dirichlet Conditions (Statement only). Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients.	B.Sc. (Hons) Physics Semester III	PHYSICS-C V / MATHEMATICAL PHYSICS-II
August	Theory	Even and odd functions and their Fourier expansions. Application. Summing of Infinite Series. Term-by-Term differentiation and integration of Fourier Series. Parseval Identity. Frobenius Method and Special Functions: Singular Points of Second Order Linear Differential Equations and their importance. Frobenius method and its applications to differential equations.	B.Sc. (Hons) Physics Semester III	PHYSICS-C V / MATHEMATICAL PHYSICS-II
September	Theory	Legendre, Bessel, Hermite and Laguerre Differential Equations. Properties of Legendre Polynomials: Rodrigues Formula, Generating Function, Orthogonality Simple recurrence relations. Expansion of function in a series of Legendre Polynomials. Bessel Functions of the First Kind: Generating Function, simple recurrence relations. Zeros of Bessel Functions (Jo(x) and J1(x)) and Orthogonality	B.Sc. (Hons) Physics Semester III	PHYSICS-C V / MATHEMATICAL PHYSICS-II
October/November	Theory	Some Special Integrals: Beta and Gamma Functions and Relation between them. Expression of Integrals in terms of Gamma Functions. Partial Differential Equations: Solutions to partial differential equations, using separation of variables: Laplace's Equation in problems of rectangular geometry. 18 Solution of wave equation for vibrational modes of a stretched string, rectangular and circular membranes.	B.Sc. (Hons) Physics Semester III	PHYSICS-C V / MATHEMATICAL PHYSICS-II

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Name of the Faculty Member: Dr. Annu Malhotra
Department: Physics. Year: 2016-17

Month	Theory/ Practical	Topics	Course	Paper Name
January	Theory	Complex Analysis: Brief Revision of Complex Numbers and their Graphical Representation. Euler's formula, De Moivre's theorem, Roots of Complex Numbers. Functions of Complex Variables. Analyticity and Cauchy-Riemann Conditions. Examples of analytic functions. Singular functions: poles and branch points, order of singularity, branch cuts.	B.Sc. (Hons) Physics Semester IV	PHYSICS-VIII/ MATHEMATICAL PHYSICS-III
February	Theory	Integration of a function of a complex variable. Cauchy's Inequality. Cauchy's Integral formula. Simply and multiply connected region. Laurent and Taylor's expansion. Residues and Residue Theorem. Application in solving Definite Integrals.	B.Sc. (Hons) Physics Semester IV	PHYSICS-VIII/ MATHEMATICAL PHYSICS-III
March	Theory	Integrals Transforms: 25 Fourier Transforms: Fourier Integral theorem. Fourier Transform. Examples. Fourier transform of trigonometric, Gaussian, finite wave train and other functions. Representation of Dirac delta function as a Fourier Integral. Fourier transform of derivatives, Inverse Fourier transform, Convolution theorem. Properties of Fourier transforms (translation, change of scale, complex conjugation, etc.).	B.Sc. (Hons) Physics Semester IV	PHYSICS-VIII/ MATHEMATICAL PHYSICS-III
April	Theory	One dimensional Wave Equations, Dirac delta function, definition and properties. Laplace Transforms: Laplace Transform (LT) of Elementary functions. Properties of LTs: Change of Scale Theorem, Shifting Theorem. LTs of 1st and 2nd order Derivatives and Integrals of Functions, Derivatives and Integrals of LTs. LT of Unit Step function, Dirac Delta function, Periodic Functions. Convolution Theorem. Inverse LT. Application of Laplace Transforms to 2nd order Differential Equations: Coupled differential equations of 1st order. Solution of heat flow along semi infinite bar using Laplace transform.	B.Sc. (Hons) Physics Semester IV	PHYSICS-VIII/ MATHEMATICAL PHYSICS-III

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Name of Faculty Member: Dr. Rekha
Department: Physics. Year: 2016-17

Month	Theory/ Practical	Topics	Course	Paper Name
August	Theory	Unit-1 Thermodynamic Description of system: Zeroth Law of thermodynamics and temperature. First law and internal energy, conversion of heat into work, Various Thermodynamical Processes, Applications of First Law: General Relation between CP and CV, Work Done during Isothermal and Adiabatic Processes, Compressibility and Expansion Coefficient, Reversible and irreversible processes.	B.Sc. Physical Science Sem-III	Physics CC-3A Thermal Physics and statistical mechanics
September	Theory	Unit-1 Second law, Entropy, Carnot's cycle & theorem, Entropy changes in reversible and irreversible processes, Entropy-temperature diagrams, Third law of thermodynamics, Unattainability of absolute zero. Unit-2 Thermodynamic Potentials: Enthalpy, Gibbs, Helmholtz and Internal Energy functions, Maxwell's relations and applications - Joule-Thompson Effect, Clausius-Clapeyron Equation, Expression for (CP – CV), CP/CV, TdS equations.	B.Sc. Physical Science Sem-III	Physics CC-3A Thermal Physics and statistical mechanics
October	Theory	Unit-3 Kinetic Theory of Gases: Derivation of Maxwell's law of distribution of velocities and its experimental verification, Mean free path (Zeroth Order), Transport Phenomena: viscosity, Conduction and Diffusion (for vertical case), Law of equipartition of energy (no derivation) and its applications to specific heat of gases; mono-atomic and diatomic gases. Unit-4 Theory of Radiation: Blackbody radiation, Spectral distribution, Concept of Energy Density, Derivation of Planck's law, Deduction of Wien's distribution law, Rayleigh- Jeans Law, Stefan Boltzmann Law and Wien's displacement law from Planck's law.	B.Sc. Physical Science Sem-III	Physics CC-3A Thermal Physics and statistical mechanics
November	Theory	Unit-5 Statistical Mechanics: Phase space, Macrostate and Microstate, Entropy and	B.Sc. Physical	Physics CC-3A

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		Thermodynamic probability, Maxwell-Boltzmann law, distribution of velocity, Quantum statistics, Fermi-Dirac distribution law, Bose-Einstein distribution law, comparison of three statistics.	Science Sem-III	Thermal Physics and statistical mechanics
August	Theory	Introduction: Drafting Instruments and their uses. lettering: construction and uses of various scales: dimensioning as per I.S.I. 696-1972. Engineering Curves: Parabola: hyperbola: ellipse: cycloids, involute: spiral: helix and loci of points of simple moving mechanism.2D geometrical construction. Representation of 3D objects. Principles of projections.	B.Sc. Physics Hons Sem-III	Physics SEC Technical Drawing
September	Theory	Projections: Straight lines, planes and solids. Development of surfaces of right and oblique solids. Section of solids.	B.Sc. Physics Hons Sem-III	Physics SEC Technical Drawing
October	Theory	Object Projections: Orthographic projection. Interpenetration and intersection of solids. Isometric and oblique parallel projection of solids. CAD Drawing: Introduction to CAD and Auto CAD, precision drawing and drawing aids, Geometric shapes, Demonstrating CAD- specific skills (graphical user interface. Create, retrieve, edit, and use symbol libraries. Use inquiry commands to extract drawing data). Control entity properties.	B.Sc. Physics Hons Sem-III	Physics SEC Technical Drawing
November	Theory	Demonstrating basic skills to produce 2-D and 3-Ddrawings. 3D modeling with Auto CAD (surfaces and solids), 3D modelling with sketch up, annotating in Auto CAD with text and hatching, layers, templates and design center, advanced plotting (layouts, viewports), office standards, dimensioning, internet and collaboration, Blocks, Drafting symbols, attributes, extracting data. Basic printing, editing tools, Plot/Print drawing to appropriate scale.	B.Sc. Physics Hons Sem-III	Physics SEC Technical Drawing
August-November	Practical	Practical based on drawing 2D, 3D curves, and orthographic projections using manual drafter and AutoCAD software.	B.Sc. Physics Hons Sem-III	Physics SEC Practical Technical Drawing

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August-November	Practical	*1 : Determination of Fundamental Constants* 1. To determine the value of Boltzmann Constant by studying Forward Characteristics of a Diode. 2. To determine the value of Planck's Constant by using a Photoelectric Cell. 3. To determine the value of Planck's Constant by using LEDs of at least 4 Different Wavelengths. *2 : Atomic & Molecular Physics* 1. To determine the value of e/m by (a) Magnetic Focussing or (b) Bar Magnet. 2. To determine the wavelengths of Hydrogen spectrum and hence to determine the value of Rydberg's Constant. 3. To determine the Absorption Lines in the Rotational Spectrum of Iodine Vapour. *3 : Miscellaneous* 1. To determine the Wavelength of a He-Ne Laser. 2. To determine the value of Stefan's Constant. 3. To determine the Wavelength and the Velocity of Ultrasonic Waves in a liquid (Kerosene Oil, Xylene, etc.) by studying the Diffraction of light through an Ultrasonic Grating.	B.Sc. Physics Hons. Sem-V	Physics Lab V
August-November	Practical	1. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. 2. To determine the wavelengths of Hydrogen spectrum and hence to determine the value of Rydberg's Constant. 3. To study the Resistivity of a Ge Crystal with temperature by Four-Probe Method and hence to determine the Band Gap Eg for it. 4. To determine the Wavelength and the Velocity of Ultrasonic Waves in a liquid (kerosene oil, xylene, etc.) by studying the Diffraction of light through an Ultrasonic Grating. 5. To determine the Specific Rotation of cane sugar using Polarimeter. 6. To determine the Wavelength of a He-Ne laser.	B.Sc Physical Science Sem-V	PHPP-505: Physics Laboratory

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Name of Faculty Member: Dr. Rekha
Department: Physics. Year: 2016-17

Month	Theory/ Practical	Topics	Course	Paper Name
January	Theory	Superposition of Two Collinear Harmonic oscillations: Simple harmonic motion (SHM). Linearity and Superposition Principle. (1) Oscillations having equal frequencies and (2) Oscillations having different frequencies (Beats). Superposition of Two Perpendicular Harmonic Oscillations: Graphical and Analytical Methods. Lissajous Figures (1:1 and 1:2) and their uses. Waves Motion- General: Transverse waves on a string. Travelling and standing waves on a string. Normal Modes of a string. Group velocity, Phase velocity. Plane waves. Spherical waves, Wave intensity.	B.Sc. Physical Science Sem-IV	Physics CC-4A Waves and Optics
February	Theory	Sound: Sound waves, production and properties. Intensity and loudness of sound. Decibels. Intensity levels. musical notes. musical scale. Acoustics of buildings (General idea). Wave Optics: Electromagnetic nature of light. Definition and Properties of wave front. Huygens Principle. Interference: Interference: Division of amplitude and division of wavefront. Young's Double Slit experiment. Lloyd's Mirror & Fresnel's Biprism. Phase change on reflection: Stokes' treatment.	B.Sc. Physical Science Sem-IV	Physics CC-4A Waves and Optics
March	Theory	Interference in Thin Films: parallel and wedge-shaped films. Fringes of equal inclination (Haidinger Fringes); Fringes of equal thickness (Fizeau Fringes). Newton's Rings: measurement of wavelength and refractive index. Michelson's Interferometer: Construction and working. Idea of form of fringes, Determination of wavelength, Wavelength difference, Refractive index, and Visibility of fringes. Diffraction: Fraunhofer diffraction: Single slit; Double Slit. Multiple slits	B.Sc. Physical Science Sem-IV	Physics CC-4A Waves and Optics
April	Theory	Diffraction grating. Fresnel Diffraction: Half-period zones. Zone plate. Fresnel Diffraction pattern of a straight edge, a slit and a wire using half-period zone analysis.	B.Sc. Physical	Physics CC-4A

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		Polarization: Transverse nature of light waves. Plane polarized light – production and analysis. Circular and elliptical polarization.	Science Sem-IV	Waves and Optics
January	Theory	Introduction: Drafting Instruments and their uses. lettering: construction and uses of various scales: dimensioning as per I.S.I. 696-1972. Engineering Curves: Parabola: hyperbola: ellipse: cycloids, involute: spiral: helix and loci of points of simple moving mechanism. 2D geometrical construction. Representation of 3D objects. Principles of projections.	B.Sc. Physics Hons Sem-IV and B.Sc. Prog. Sem-IV	Physics SEC Technical Drawing
February	Theory	Projections: Straight lines, planes and solids. Development of surfaces of right and oblique solids. Section of solids.	B.Sc. Physics Hons Sem-IV and B.Sc. Prog. Sem-IV	Physics SEC Technical Drawing
March	Theory	Object Projections: Orthographic projection. Interpenetration and intersection of solids. Isometric and oblique parallel projection of solids. CAD Drawing: Introduction to CAD and Auto CAD, precision drawing and drawing aids, Geometric shapes, Demonstrating CAD- specific skills (graphical user interface. Create, retrieve, edit, and use symbol libraries. Use inquiry commands to extract drawing data). Control entity properties.	B.Sc. Physics Hons Sem-IV and B.Sc. Prog. Sem-IV	Physics SEC Technical Drawing
April	Theory	Demonstrating basic skills to produce 2-D and 3-Ddrawings. 3D modeling with Auto CAD (surfaces and solids), 3D modelling with sketch up, annotating in Auto CAD with text and hatching, layers, templates and design center, advanced plotting (layouts, viewports), office standards, dimensioning, internet and collaboration, Blocks, Drafting symbols, attributes, extracting data. Basic printing, editing tools, Plot/Print drawing to appropriate scale.	B.Sc. Physics Hons Sem-IV and B.Sc. Prog. Sem-IV	Physics SEC Technical Drawing

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January-April	Practical	Practicals based on drawing 2D, 3D curves, and orthographic projections using manual drafter and AutoCAD software.	B.Sc. Physics Hons Sem-IV and B.Sc. Prog. Sem-IV	Physics SEC Practical Technical Drawing
January-April	Practical	1. To study potential divider circuit. 2. Ballistic Galvanometer: (i) Measurement of charge and current sensitivity (ii) Measurement of CDR 3. To compare capacitances using De'Sauty's bridge. 4. To study the Characteristics of a Series RC Circuit. 5. To study a series LCR circuit and determine its (a) Resonant Frequency, (b) Quality Factor 6. To determine a Low Resistance by Carey Foster's Bridge. 7. To verify the Thevenin, Superposition, and Maximum Power Transfer Theorem	B.Sc. Prog. Sem-II	Physics Lab- CC 2A: Electricity, Magnetism and EMT
January-April	Practical	1. T- π network conversion. 2. To study (i) Half-wave Rectifier and (ii) Full-wave Bridge Rectifier and investigate the effect of C, L and π filters. 3. Study of diode as clipping and clamping device. 4. To design a CE Amplifier of a given gain (mid-gain) using voltage divider bias. 5. To design an Oscillator of given specifications using transistors. 6. To study Amplitude Modulation and Demodulation. 7. Study of FET characteristics.	B.Sc Physical Science Sem-VI	PHPP-606 Physics Laboratory

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Name of Faculty member: Shruti
Department: Physics
Year: 2016-17

Month	Theory/ Practicals/ Tutorials	Topics	Course	Paper Code/ Name
July	Theory & Practical	Curve fitting, Least square fit,	B.Sc(H) II Phys	PHYSICS-C V: MATHEMATICAL PHYSICS-II
July	Theory	Vectors, Fundamentals of Dynamics	B.Sc(P) I	Mechanics
July	Practical	Sextant, Motion of Spring and calculate (a) Spring constant, (b) Moment of Inertia of a Flywheel,Maxwell's needle,Searle'smethod,Bar Pendulum,Kater's Pendulum	B.Sc(P) I	Mechanics: Lab
July	Practical	Callender and Barne's,Searle's Apparatus,y Lee and Charlton's discmethod.Coefficient of Resistance byPlatinum Resistance Thermometer,RTD,fThermo-Emf of aThermocouple w	B.Sc(P) II Thermallab	Thermal: Lab
August	Theory & Practical	Solution of Linear system of equations by Gauss elimination method and Gauss Seidal method. Diagonalisation of matrices, Inverseof a matrix,	B.Sc(H) Phys	PHYSICS-C V: MATHEMATICAL PHYSICS-II

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August	Theory	Work and Energy,RotationalDynamics,	B.Sc(P) I	Mechanics
August	Practical	Sextant,Motion of Spring and calculate (a) Spring constant, (b) Moment of Inertia of a Flywheel,Maxwell's needle,Searle'smethod,Bar Pendulum,Kater's Pendulum	B.Sc(P) I	Mechanics:Lab
August	Practical	Callender and Barne's,Searle's Apparatus,y Lee and Charlton's discmethod.Coefficient of Resistance byPlatinum Resistance Thermometer,RTD,fThermo-Emf of aThermocouple w	B.Sc(P) II Thermallab	Thermal:Lab
Septemb er	Theory & Practical	First order Differential equation Euler,modified Euler method	B.Sc(H) Phys	PHYSICS-C V: MATHEMA TICAL PHYSICS-II
Septemb er	Theory	Elasticity,Gravitation,Central forceMotion	B.Sc(P) I	Mechanics

Septemb er	Practical	Sextant,Motion of Spring and calculate (a) Spring constant, (b) Moment of Inertia of a Flywheel,Maxwell's needle,Searle'smethod,Bar Pendulum,Kater's Pendulum	B.Sc(P) I	Mechanics:Lab

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Septemb er	Practical	Callender and Barne's,Searle's Apparatus,y Lee and Charlton's discmethod.Coefficient of Resistance byPlatinum Resistance Thermometer,RTD,fThermo-Emf of aThermocouple w	B.Sc(P) II Thermallab	Thermal:Lab
October	Theory & Practical	RungeKutta (RK) second and Fourth order methods Second order differential equation Fixeddifference method	B.Sc(H) Phys	PHYSICS-C V: MATHEMA TICAL PHYSICS-II
October	Theory	Oscillations: Review of SHM, Special Theory of Relativity	B.Sc(P) I	Mechanics
October	Practical	Sextant,Motion of Spring and calculate (a) Spring constant, (b) Moment of Inertia of a Flywheel,Maxwell's needle,Searle'smethod,Bar Pendulum,Kater's Pendulum	B.Sc(P) I	Mechanics:Lab
October	Practical	Callender and Barne's,Searle's Apparatus,y Lee and Charlton's discmethod.Coefficient of Resistance byPlatinum Resistance Thermometer,RTD,fThermo-Emf of aThermocouple w	B.Sc(P) II Thermallab	Thermal:Lab

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Name of Faculty member: Shruti
Department: Physics
Year: 2016-17

Month	Theory/ Practicals/ Tutorials	Topics	Course	Paper Code/Name
January	Theory	Electric Field and Electric Potential	B.Sc(P) I	Electricity and Magnetism
January	Practical	Carey Foster's Bridge,Anderson's bridge.Verify the Thevenin Theorems ,Maximum power transfer theorems,response curve of a SeriesLCR circuit,charge sensitivity, currentsensitivity & CDR of Ballistic Galvanometer	B.Sc(H) I	Electricity and Magnetism :Lab
January	Practical	Planck's constant using LEDs,e/m by (a) Magnetic focusing or (b) Bar magnet. Tunneling effect, wavelengthof laser source using diffraction of single slit and Double slit,Photo- electric effect:wavelength of H-alpha emission line of Hydrogen atom,absorption lines in the rotational spectrum of Iodine vapour.	B.Sc(H) II	PHYSICS-C IX: ELEMENTS OF MODERN PHYSICS:Lab
February	Theory	Dielectric Properties of Matter	B.Sc(P) I	Electricity and Magnetism

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February	Practical	Carey Foster's Bridge,Anderson's bridge.Verify the Thevenin Theorems ,Maximum power transfer theorems,response curve of a SeriesLCR circuit,charge sensitivity, currentsensitivity & CDR of Ballistic Galvanometer	B.Sc(H) I	Electricity and Magnetism :Lab
February	Practical	Planck's constant using LEDs,e/m by (a) Magnetic focusing or (b) Bar magnet. Tunneling effect, wavelengthof laser source using diffraction of single slit and Double slit,Photo- electric effect:wavelength of H-alpha emission line of Hydrogen atom,absorption lines in the rotational spectrum of Iodine vapour.	B.Sc(H) II	PHYSICS-C IX: ELEMENTS OF MODERN PHYSICS:Lab
March	Theory	Magnetic Field,Magnetic Propertiesof Matter	B.Sc(P) I	Electricity and Magnetism

March	Practical	Carey Foster's Bridge,Anderson's bridge.Verify the Thevenin Theorems ,Maximum power transfer theorems,response curve of a SeriesLCR circuit,charge sensitivity, currentsensitivity & CDR of Ballistic Galvanometer	B.Sc(H) I	Electricity and Magnetism :Lab

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March	Practical	Planck's constant using LEDs,e/m by (a) Magnetic focusing or (b) Bar magnet. Tunneling effect, wavelengthof laser source using diffraction of single slit and Double slit,Photo- electric effect:wavelength of H-alpha emission line of Hydrogen atom,absorption lines in the rotational spectrum of Iodine vapour.	B.Sc(H) II	PHYSICS-C IX: ELEMENTS OF MODERN PHYSICS:Lab
April	Theory	Electromagnetic Induction,Electromagnetic Theory	B.Sc(P) I	Electricity and Magnetism
April	Practical	Carey Foster's Bridge,Anderson's bridge.Verify the Thevenin Theorems ,Maximum power transfer theorems,response curve of a SeriesLCR circuit,charge sensitivity, currentsensitivity & CDR of Ballistic Galvanometer	B.Sc(H) I	Electricity and Magnetism :Lab
April	Practical	Planck's constant using LEDs,e/m by (a) Magnetic focusing or (b) Bar magnet. Tunneling effect, wavelengthof laser source using diffraction of single slit and Double slit,Photo- electric effect:wavelength of H-alpha emission line of Hydrogen atom,absorption lines in the rotational spectrum of Iodine vapour.	B.Sc(H) II	PHYSICS-C IX: ELEMENTS OF MODERN PHYSICS:Lab

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Mathematics Department

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Name of Faculty Member: Nandita Narain
Department: Maths
Year: 2016 -17

Month	Course	Paper Code/Name	Theory Covered	Tutorials
July 20th-31st	BSc(H) Maths Sem3	Group Theory 1	Sets, Relations, Functions, Operations, Semigroups, Groups, Hereditary properties, Subgroups, Examples, R, C, Integers modulo n,	1: Uniqueness of Identity, inverse, shoes and socs prop, cancellation laws, invertible elements of a semigroup from a group etc Operation such as a*b = a+b+ab
August			Functions from a non-empty set to a Group/ semigroup under pointwise operation and applications such as R^2, R^n, R^N. Real valued Functions on [a,b], Functions from a non-empty set to itself under composite. Permutation Groups, S3, Quarternions, Isometries of R3, Translations, Rotations, Groups of Symmetry for line segment, square, triangle, etc Dn Subgroups, 3step, 2step, 1 step criteria, closure criteria for finite subset, Union and Intersection of subgroups	2. Conditions under which semigroups are groups 3. Groups of order 4, exercises on groups of symmetry from Gallian
September			HKsubgroup iff HK=KH, Centraliser of element, subset, subgroup, Normaliser of subset, subgroup, Z(G), Subgroup generated by non-empty set, Cyclic Subgroup <a>, Every Subgroup of Cyclic Group is cyclic, Order of element, every element of finite group is of finite order, a^n=e => o(a) |n, order of conjugate, o(ab)=o(ba), o<a> = o(a), Lagrange's Thm for cyclic groups and converse, Generators of Cyclic Groups, No of elements of order m, Properties of Left and Right Cosets, Partition Theorem, Lagrange's Theorem, a^o(G) =e, Fermat's Little Theorem, 1-1 corresp between Left and Right Cosets, Index of Subgroup in	4. Exercises on Subgroups, Cyclic groups, Lagrange's Theorem from Gallian

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			Group, Groups with Non Trivial Subgroups, Prime Order=> No NTS=> Cyclic. Infinite=> NTS. Finite, non-prime=> cyclic. Normal subgroups, Characterisations of Normality, Subgroups of Index 2 are normal, Examples from S3, D4, Q8, Quotient Group, Indices and Order in Quotient Group,	
October			Intersection and Product of Normal Subgroups, Homomorphisms, Examples including limits of sequences, Basic properties such as f(e)=e', f(a^-1)=f(a)^-1, Homomorphic Image of subgroup and normal subgroup, preservation of abelian, cyclic, o(f(a)) | o(a), Kernel, Homom is 1-1 iff K={e}, Isomorphism, Natural homomorphism, First Isomorphism Theorem and Converse, Second Isomorphism Theorem, G/N~G/M/N/M, G/N~G'/N', 1-1 correspondence between normal subgroups of G' and those of G containing K. "Isomorphic to" as an equivalence relation, Abstract Groups, Infinite Cyclic Groups isomorphic to Z, Finite cyclic groups to Zn. Examples of isomorphic and non-isomorphic groups. Permutations of non-empty set X , X~Y => Sx ~SY	5. Exercises from Normal Subgroups, Homomorphisms and Isomorphisms from Gallian
November			Cayley's Theorem and its extension to G/H, Sn, Cycles in Sn, Order of a cycle, Disjoint cycles commute, product of disjoint cycles is not a cycle, order of product of disjoint cycles, every cycle is product of transposition, Disjoint Permutations, Decomposition Theorem, Order of Permutation, Permutation as product of transpositions. Inversion and Parity of a permutation, Parity Lemma Parity of product is congruent to sum of parities mod 2, Even and Odd permutations defined through parity, Parity of a transposition, Permutation is even iff it is a product of even number of transposition, "Always even – always odd" theorem. Orbits and Stabilisers, Orbit-Stabiliser Theorem, Direct Products	6. Exercises on Permutation Groups and Direct Products from Gallian

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Name of Faculty Member: Nandita Narain
Department: Maths
Year: 2016 -17

Month	Course	Paper Code/Name	Theory	Tutorials
January	BSc(H) Maths Sem 2	Real Analysis 1	Relations, Functions Operations, Groups, Assignment 1 Rings, Fields, Intro to R Defn of N, PMI SPMI, Order Properties Order Properties &Denseness of R Indices nth Root and Boundedness Greatest and Least elements and examples Sup and Inf, uniqueness, ge=>sup Examples, CPR APR and applications WOP, Greatest Int Function Q is dense in R Root 2 irrational, Q' is dense in R Proof of Existence of Root 2 Incompleteness of Q Modulus and properties Intro to Sequences, Cgnce Uniqueness of Limit, Examples	1. Uniqueness of Identity etc 2. a.0=0 and a.(-b)=-(a.b) 3. Monotonicity 4. Root p irrational etc 5. Modulus
February			Some Simple Results, Mod Result	6. PMI ⇔ SPMI⇔ WOP

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			Odd-Even Subs, Tail Thm Cgt => bdd, Cgt non null sequences Algebra of Limits (Sum, Scalar Multiple, Product, Quotient), Applications, Converse of AOL not true, Bdd x null = null Order Preservation by Limits, Sandwich Theorem, Applications, r^n, n^1/n, etc, Divergence, Necessary condns, Simple Results (odd and even subsequences, Tail Result, Domination Thm), Algebra of Divergence and Indeterminate Forms, Monotonic Sequences, MCT, MDT and Applications, Defn of e, Inductively Defined Sequences, Consecutive Ratio Theorem and applications, Sequence of Arithmetic Means, Summary of Exponential and Log Functions and defn of a^x for a>0 and real x. Sequence of Geometric Means, Nth Root Test and applications.	7. Equivalent defns of Convergence 8. Root Result, Max <an,bn> etc 9. Inductively Defined Sequences
March			Topological aspects of R, Nbds, Interior, Open and Closed sets, Examples and Results for Union and Intersection, Limit Points and Properties of Derived Sets, Bolzano Weierstrass Theorem for Sets, Closure, Cluster Points of Sequences, Subsequences, Criterion for non-convergence to l and non -divergence, Monotone subsequence Theorem, Bolzano Weierstrass Thm for Sequences, Cauchy Sequences, Convergent => Cauchy, Cauchy => bounded, Algebra of Cauchy Sequences, Cauchy => Convergent, Infinite Series, Sequence of Partial Sums, Telescoping Series, Geometric Series, Algebra of Convergent Series	10. Assignments on Sandwich Theorem 11. Cauchy Sequences and Subsequences 12. Discussion of Test Papers
April			Necessary Condition for Convergence, Cauchy General Principal of Convergence, Series of Non Negative Terms, Basic Comparison Test, Limit Comparison Test, Cauchy's nth Root Test, Ratio Test, Integral Test, Alternating Series, Absolute Convergence, Limit Superior and Inferior. Epsilon Characterisation, Mn Characterisation, Cluster Points Characterisation, Characterisation of Intervals and Nested Intervals Property.	13. Series 14. Limit Superior and Inferior

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Name of the Faculty Member: Dr. Sonia Davar. Department: Mathematics. Year: 2016-17

Month	Th/ Prac	Topics	Course	Paper Name
July	Theory	Recap, Concavity and Points of Inflection, Limits involving infinity, L Hospital's rule & Asymptotes	B.Sc. (Hons.) Mathematics (Sem I)	C1: Calculus
		Recap, functions and their graphs	B.Sc. Programme (Sem I)	Calculus and Matrices
	Practical	Plotting the graphs of simple functions	B.Sc. (Hons.) Mathematics (Sem I)	C1: Calculus
August	Theory	Sketching of polynomial, irrational and rational functions, polar coordinates & sketching of polar curves	B.Sc. (Hons.) Mathematics (Sem I)	C1: Calculus
		Successive Differentiation, Sequences	B.Sc. Programme (Sem I)	Calculus and Matrices
	Practical	Plotting the graphs of polynomials of degree 4 & 5 and their derivatives, sketching parametric curves, tracing of conics	B.Sc. (Hons.) Mathematics (Sem I)	C1: Calculus
September	Theory	Parametric curves, reduction formula, volume of solid of revolution	B.Sc. (Hons.) Mathematics (Sem I)	C1: Calculus
		Applications to Mathematical Modelling, Polynomial Approximations of functions	B.Sc. Programme (Sem I)	Calculus and Matrices
	Practical	Obtaining surface of revolution of curves, graph of hyperbolic functions, computation of limits, differentiation, integration & sketching of vector valued functions	B.Sc. (Hons.) Mathematics (Sem I)	C1: Calculus
October	Theory	Volume of solid of revolution, arc length, surface area of solid of revolution & optimisation	B.Sc. (Hons.) Mathematics (Sem I)	C1: Calculus
		Polynomial approximation of functions, functions of several variables and partial derivatives	B.Sc. Programme (Sem I)	Calculus and Matrices
	Practical	Complex numbers and their representation, operations like addition, multiplication, division, modulus, graphical representation, finding numbers between two real numbers, matrix operations and solving a system of equations	B.Sc. (Hons.) Mathematics (Sem I)	C1: Calculus

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Name of the Faculty Member: Dr. Sonia Davar. Department: Mathematics. Year: 2016-17

Month	Theory/ Practical	Topics	Course	Paper code/ Name
January	Theory	Recap, General, particular and singular solution; Separable, reducible and homogenous differential equation, Exact and Non-Exact DE	B.Sc. (Hons.) Mathematics (Sem II)	Differential Equations
		Recap, Limit-Continuity & Differentiability	B.Sc. Programme (Sem II)	Calculus & Geometry
	Practical	Plotting of second and third order solution family, growth and decay model, lake pollution model, cold pill model, limited growth of pollution	B.Sc. (Hons.) Mathematics (Sem II)	Differential Equations
February	Theory	Linear & Bernoulli Differential Equations, Mathematical Modelling, Second order Linear DE	B.Sc. (Hons.) Mathematics (Sem II)	Differential Equations
		Asymptotes, multiple points & curve tracing	B.Sc. Programme (Sem II)	Calculus & Geometry
	Practical	Predator-Prey Model, Epidemic model of influenza, battle model, recursive sequences	B.Sc. (Hons.) Mathematics (Sem II)	Differential Equations
March	Theory	Method of undetermined coefficients, Cauchy Euler Formula	B.Sc. (Hons.) Mathematics (Sem II)	Differential Equations
		Polar Curves Sketching, reduction formulae, finding length of a given curve	B.Sc. Programme (Sem II)	Calculus & Geometry
	Practical	Bolzano-Weierstrass Theorem Verification, Convergence & Divergence of infinite series, Cauchy Root Test	B.Sc. (Hons.) Mathematics (Sem II)	Differential Equations
April	Theory	Method of variation of parameters and acceleration and velocity model	B.Sc. (Hons.) Mathematics (Sem II)	Differential Equations
		Finding arc length, area & surface area	B.Sc. Programme (Sem II)	Calculus & Geometry
	Practical	D'Alembert's ratio test, Discussion of convergence of various sequences	B.Sc. (Hons.) Mathematics (Sem II)	Differential Equations

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Name of the Faculty Member: Sonali Batra
Department: Mathematics
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory & Tutorials	Basic Principles, Interest Rates	B.sc (H) III Mathematics	Mathematical Finance- 32357504
August	Theory & Tutorials	Net Present Value and Internal rate of return , Bonds – Prices , yields durations and convexity, immunization	B.sc (H) III Mathematics	Mathematical Finance- 32357504
September	Theory & Tutorials	Asset return, Short Selling, Portfolio Mean variance theory , Markowitz Model , two fund theorem and one fund theorem , Capital Mkt line and Security mkt line ,Capital asset pricing model (CAPM) , Beta of Stocks, Sharpe index , Jensen's index,	B.sc (H) III Mathematics	Mathematical Finance- 32357504
October	Theory & Tutorials	Derivatives- Futures, Forwards, options, Swaps. Lognormal Distribution for Stock prices, Binomial tree model	B.sc (H) Mathematics	Mathematical Finance- 32357504

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Name of the Faculty Member: Sonali Batra
Department: Mathematics
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory & Tutorials	Models – Population Growth, Administration of Drugs, Cell Division, Heart beat , Nerve Impulse transmission , Chemical reactions, Predator-Prey model	III B.Sc. (h) Mathematics	Biomathematics - 32357609
February	Theory & Tutorials	Local Stability, Limit Cycles and Forced Oscillations , Phase plane Analysis of Heart beat Model, model of Cardiac Pacemaker	III B.Sc. (h) Mathematics	Biomathematics – 32357609
March	Theory & Tutorials	Mathematics of Nerve impulse transmission, Excitability, Bifurcation- Limit cycle, Discrete and Period- doubling, Stability of Limit cycle and Poincare Plane	III B.Sc. (h) Mathematics	Biomathematics – 32357609
April	Theory & Tutorials	Matrix Models (Jukes- cantor, Kimura) for base substitution for DNA, Phylogenetic distance and trees , UPGMA and Neighbor-joining method, Mendelian Genetics, Probability Distribution in Genetics.	III B.Sc. (h) Mathematics	Biomathematics – 32357609

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Name of the Faculty Member: Dr. Radha Mohan
Department: Mathematics
Year: 2016-17

Month	Theory/	Topics	Course	Paper code/ Name
July				
Week 3	Automorphism,Iner Automorphism, Automorphism groups,Automorphismn grouos of cyclic grouos	Automorphism	B.Sc. Mathematics	32351502
Week 4	Characteristic subgrouos, Commuttator subgrouo and properties, Applications of factor subgroups to Automorphism groups	Characteristic subgrouos and Commutator subgroups.		
August				
Week 1	External direct products and its properties, the groups U(n) as an external direct product	External Direct product if groups.		
Week 2	Internal Direct products	Internal Direct Product if groups		
Week 3	Statement of Fundamental Theorem of finite abelian groups, the isomorphism class of finite abelian groups	The Fundamental Theorem of Finite abelian groups		
Week 4	Group actions	Group actions		
September				
Week 1	Permutation representations of group actions, Stabilizers and kernels of group actions	Group actions		

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Week 2	Groups acting on themselves by left multiplication and consequences	The action of left multiplication	B.Sc. Mathematics	32351502
Week 3	Conjugacy classes in S_n.	Conjugacy classes		
Week 4	Conjugacy classes, class equation and p- groups.	Conjugacy classes		
October				
Week 1	State the three Sylow theorems and applications	Sylow Theorems		
Week 2	Application of Sylow Theorems	Sylow Theorems		
Week 3	Finite simple groups, Non-simplicity tests, Generalized Cayley's Theorems	Finite Grouos		
Week 4	Index Theorem, Embedding Theorem and Applications, Simplicity of A_5.	Finite grouos		

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Name of the Faculty Member: Dr. Radha Mohan
Department: Mathematics
Year: 2016-17

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January			B. Sc. Mathematics	32351602
Week 1	Polynomial Rings over commutative rings, Division Algorithm and consequences, Principal Ideal Throreem	Polynomial Rings		
Week 2	Factorization of polynomials, Reducibility tests, Irreducibility tests	Polynomial Rings		
Week 3	Eisenstein's criterion, Unique factorization in Z[x].	Polynomial Rings	B. Sc. Mathematics	32351602
Week 4	Divisibility in integral domains, irreducibles and primes	Divisibility		
February				
Week 1	Unique Factorization Domains, Euclidean domains	Divisibility		
Week 2	Dual spaces, double dual, Dual basis, Transpose of a linear transformation and its matrix, annihilators	Dual space of a vector spaces		
Week 3	Eigenvalues, eigenvectors, Eigenspaces and characteristic polynomial of a linear transformation	Diagonalizability		
Week 4	Digonalizablilty, Invariant subspaces and Cayley-Hamilton Theorem, Minimal Polynomial of a linear operator.	Diagonalizability and Minimal polynomial.		

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March				
Week1	Inner product spaces and norms	Inner Product spaces		
Week 2	Orthogonal basis, Gram-Schmidt orthogonalization	Orthogonality		
Week 3	Orthogonal completeness, Bessel's Inequality	Orthogonality	B. Sc. Mathematics	32351602
April				
Week 1	Adjoint of a linear operator and properties, Least squares approximation, Minimal solutions to systems of linear equations	Adjoint of a linear operator		
Week 2	Normal and self-adjoint operators	Normal and self-adjoint operators		
Week 3	Unitary and orthogonal operators	Unitary and orthogonal operators		

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Name of the Faculty Member: Kashif Ahmed. Department: Mathematics, Year: 2016-17

Month	Theory/Practical	Topics	Course	Paper Name
July	Theory	First order ordinary differential equations: Basic concepts and ideas, First order exact differential equation, Integrating factors and rules to find integrating factors. Linear equations and Bernoulli equations, Orthogonal trajectories and oblique trajectories.	Generic Elective-II	32355301/ Differential Equations
	Theory+Practical	Introduction to structured programming: data types- simple data types, floating data types, character data types, string data types, arithmetic operators and operators precedence, variables and constant declarations, expressions, input using the extraction operator >> and cin, output using the insertion operator << and cout, preprocessor directives.	B.Sc.(H) Maths – III	32357503 / C++ Programming
August	Theory	Basic theory of higher order linear differential equations, Wronskian and its properties, Solving a differential equation by reducing its order. Linear homogenous equations with constant coefficients, Linear non-homogenous equations, The method of undetermined coefficients.	Generic Elective – II	32355301/ Differential Equations
	Theory+Practical	increment(++) and decrement(--) operations, creating a C++ program, input/ output, relational operators, logical operators and logical expressions, if and if-else statement, switch and break statements.	B.Sc.(H) Maths – III	32357503 / C++ Programming
September	Theory	The method of variation of parameters, The Cauchy-Euler equation, Simultaneous differential equations. Partial differential equations: Basic Concepts and definitions, Mathematical problems; First order equations: Classification and construction. "for", "while" and "do-while" loops and continue statement, nested control statement, value returning functions, value versus reference parameters, local and global variables.	Generic Elective – II	32355301/ Differential Equations
October	Theory	Geometrical interpretation, Method of characteristics, General solutions of first order partial differential equations. Canonical forms and method of separation of variables for first order partial differential equations. Second order partial differential equations: Classification, Reduction to canonical forms, With constant coefficients, General solutions.	Generic Elective-II	32355301/ Differential Equations
	Theory+Practical	one dimensional array, two-dimensional array, pointer data and pointer variables.	B.Sc.(H) Maths – III	32357503 / C++ Programming

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Name of the Faculty Member: Kashif Ahmed. Department: Mathematics, Year: 2016-17

Month	Theory/Practical	Topics	Course	Paper code
January	Theory	Fundamental operation with vectors in Euclidean space n , Linear combination of vectors, dot product and their properties, Cauchy-Schwarz inequality, Triangle inequality, Projection vectors. Some elementary results on vectors in n ; Matrices: Gauss–Jordan row reduction, Reduced row echelon form, Row equivalence, Rank. Linear combination of vectors, Row space, Eigenvalues, Eigenvectors, Eigenspace, Characteristic polynomials, Diagonalization of matrices.	Generic Elective-I	32355202
	Theory+Practical	Introduction to compartmental models, Lake pollution model (with case study of Lake Burley Griffin), Drug assimilation into the blood (case of a single cold pill, case of a course of cold pills, case study of alcohol in the bloodstream),	B.Sc.(H) Maths – I	32351202
February	Theory	Definition and examples of vector space, Some elementary properties of vector spaces. Subspace, Span of a set, a spanning set for an eigenspace, Linear independence and dependence, Basis and dimension of a vector space, Maximal linearly independent sets, Minimal spanning sets. Application of rank: Homogenous and non-homogenous systems of linear equations; Coordinates of a vector in ordered basis, Transition matrix.	Generic Elective-I	32355202
	Theory+Practical	Exponential growth of population, Limited growth of population, Limited growth with harvesting.	B.Sc.(H) Maths – I	32351202
March	Theory	Linear transformations: Definition and examples, Elementary properties. The matrix of a linear transformation, Linear operator and similarity. Application: Computer graphics, Fundamental movements in a plane; Homogenous coordinates, Composition of movements. Kernel and range of a linear transformation, Statement of the dimension theorem, examples.	Generic Elective I Year	32355202
	Theory+Practical	Interacting population models, Epidemic model of influenza and its analysis, Predator-prey model and its analysis.	B.Sc.(H) Maths – I	32351202
April	Theory	One to one and onto linear transformations, Invertible linear transformations, isomorphism, isomorphic vector spaces. Orthogonal and orthonormal vectors, orthogonal and orthonormal bases, orthogonal complement, statement of the projection theorem and examples. Orthogonal projection onto a subspace.	Generic Elective -I	32355202
	Theory+Practical	Equilibrium points, Interpretation of the phase plane, Battle model, Epidemic model and its analysis.	B.Sc.(H) Maths – I	32351202

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Name of the Faculty Member: Dr. Jaspreet Kaur
Department: Mathematics. Year: 2016-17

Month	Theory/ Practical	Topics	Course	Paper code/ Name
July	Multivariate Calculus (**Theory 4+Practical 8**) GE-Calculus (**Theory 5**)	Def. function of several variables, graphs of two variable functions, Limit and continuity of two and three variable. Partial derivatives, Higher order partial derivatives, Tangent planes, Total differential. Practical based on these topics in maxima software. Epsilon-delta def of limit of a function, one sided limit, limits at infinity, asymptotes, differential of a function.	B.Sc(H) Mathematics IInd year B.Sc(H) Physics Ist Year	Multivariate Calculus GE-Calculus
August	Same as above	Chain rule, Maxima minima for functions of two variables, Lagrange multiplier, Def of vector field, Divergence and curl. Practical based on these topics. Concavity, points of inflection, curve tracing, indeterminate forms, L'Hopital rule, volumes by slicing, volumes by washer method, cylindrical shell method	Same as above	Same as above
September	Same as above	Double integrals over rectangular and non-rectangular regions, double integrals in polar coordinates, Triple integrals over simple solids, Triple integrals in cylindrical and spherical coordinates, Line integrals introduction. Practical based on these topics.	Same as above	Same as above
October	Same as above	Line integrals computation, application of line integrals, surface integrals, Green's theorem, Stokes theorem and Divergence theorem. Practical based on these topics. Length of plane curves, Area of surface of revolution, improper integration, Polar coordinates, Graphs in polar coordinates, Vector valued functions and results on vector valued functions.	Same as above	Same as above

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Name of the Faculty Member: Dr. Jaspreet Kaur
Department: Mathematics. Year: 2016-17

Month	Theory/ Practical	Topics	Course	Paper Name
January	Ring theory and Linear Algebra I **(Theory 2 Tutorial 2)** Complex Analysis **(Theory 4+ Practical 8)**	Definition and examples of rings, Properties of rings, subrings, integral domains and fields, characteristic of a ring, ideals. Question based on these topics from the recommended book discussed in tutorial classes. History of complex numbers, Functions of complex variable, Limit and continuity of functions of complex variables Practical: finding modulus, conjugate and argument of complex numbers, Geo. Interpretation of addition/sub and multiplication/division of complex nos., roots of unity and factors of polynomial	B.Sc(H) Mathematics IInd year B.Sc(H) Mathematics IIIrd year	Ring theory and Linear Algebra I Complex Analysis
February	Same as above	Ideal generated by a subset, factor rings, operations on ideals, prime and maximal ideals. Question based on these topics from the recommended book discussed in tutorial classes. Differentiability of complex functions, Cauchy-Riemann equations, Analytic functions, Elementary functions such as complex exponential, Complex log and Complex trigonometric functions. Practical: Image of certain sets such as unit circle, disk, line segments under elementary function and bilinear mappings.	Same as above	Same as above
March	Same as above	Ring homomorphism, properties of ring homomorphisms. Question based on these topics from the recommended book discussed in tutorial classes. Contour integration, ML-inequality theorem and applications, antiderivatives, Cauchy – Goursat theorem, Liouvilles theorem , fundamental theorem of algebra,Cauchy integral formula Practical: Verification of CR-equations Computation of contour integrals.Graphs of real and imaginary parts of complex functions.	Same as above	Same as above
April	Same as above	Isomorphism theorems for rings, The field of quotients. Question based on these topics from the recommended book discussed in tutorial classes. Complex sequences and series, complex power series, Taylors theorem, Laurent theorem, Singular points, Types of singular points, Poles and residues. Practical based on the above topics.	Same as above	Same as above

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Name of the Faculty member: Ms. Archana Chopra Department: Mathematics Year: 2016-17				
Month	**Theory/ Practical/ Tutorials**	**Topics**	**Course**	**Paper code/ Name**
July	Theory	Equivalence relations, Functions, Composition of functions.	B.Sc(H) Mathematics 1st Sem	Algebra 32351102
		Definition of the limit, Sequential criterion for limits, Criterion fornon-existence of limit.	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351301
	Tutorial	Discussion on limits	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351302
August	Theory	Invertibility and inverse of functions, One-to-onecorrespondence and the cardinality of a set.	B.Sc(H) Mathematics 1st Sem	Algebra 32351102
		Algebra of limits of functions with illustrations and examples, Squeeze theorem. Definition and illustration of the concepts ofone-sided limits, Infinite limits and limits at infinity. Definitions of continuity at a point and on a set,Sequential criterion for continuity, Algebra of continuous functions, Composition of continuousfunctions.	B.Sc(H) Mathematics3rd Sem	Theory of Real Functions 32351301
	Tutorial	Doubts discussion and Exercise Questions	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351302
Septemb er	Theory	The Euclidean algorithm. Well ordering principle, The division algorithm in Z..	B.Sc(H) Mathematics 1st Sem	Algebra 32351102
		Various properties of continuous functions defined on an interval, viz., Boundedness theorem, Maximum-minimum theorem, Statement of the location of roots theorem, Intermediate value theorem and the preservation of intervalstheorem. Definition of uniform continuity, Illustration of non- uniform continuity criteria, Uniform continuity theorem. Test-1	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351301
	Tutorial	Doubts discussion and Exercise Questions	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351302
		Divisibility, Modular arithmetic and basic properties ofcongruences. Test	B.Sc(H) Mathematics 1st Sem	Algebra 32351102

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October	Theory	Differentiability of a function, Algebra of differentiable functions,Carathéodory's theorem and chain rule.: Relative extrema, Interior extremum theorem, Mean value theorem and its applications.	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351301
	Tutorial	Doubts session and presentations based on exercisequestions	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351302
Novembe r	Theory	Statements of the fundamental theorem of arithmetic andprinciple of mathematical induction.	B.Sc(H) Mathematics 1st Sem	Algebra 32351102
		Intermediate value property of derivatives- Darboux's theorem. Taylor polynomial, Taylor's theorem and its applications, Taylor's series expansions of , sin x e x and cos.Test-2	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351301
	Tutorial	Exercise Questions and Presentations	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351302

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Name of the Faculty member: Ms. Archana Chopra Department: Mathematics Year: 2016-17				
Month	**Theory/ Practical/ Tutorials**	**Topics**	**Course**	**Paper code/ Name**
January	Theory	Definitions and examples of pointwise and uniformly convergent sequence of functions. Motivation for uniform convergence by giving examples. Theorem on the continuity ofthe limit function of a sequence of functions.	B.Sc(H) Mathematics 4th Sem	Reimann Integrationand Series of Functions 32351402
		Graphs of simple concrete functions such as polynomial,Trigonometric, Inverse trigonometric, Exponential and logarithmic functions. Limits and continuity of a function including epsilon-delta approach, Properties of continuousfunctions including Intermediate value theorem.	B.Sc(Prog) 2nd Sem	Calculus and Geometry 42351201
		Finite and infinite sets, Examples of countable and uncountable sets; Absolute value of the real line; Bounded sets, Suprema and infima, Statement of order completeness property of R , Archimedean property of R . : Real sequences,Convergence, Sum and product of convergent sequences, Order preservation andsqueeze theorem.	B.Sc(Prog) 4th Sem	Real Analysis 42354401
	Tutorial	Practice questions based on exercise.	B.Sc(H) Mathematics 4th Sem	Reimann Integrationand Series of Functions 32351402
		Practice questions based on exercise problems.	B.Sc(Prog) 4th Sem	Real Analysis 42354401

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February	Theory	The statement of the theorem on the interchange of the limitfunction and derivative, and its illustration with the help of examples. The interchange of thelimit function and integrability of a sequence of functions. Pointwise and uniform convergence ofseries of functions, Test	B.Sc(H) Mathematics 4th Sem	Reimann Integrationand Series of Functions 32351402
		Differentiability, Successive differentiation, Leibnitz theorem, Recursion formulae for higher derivatives.	B.Sc(Prog) 2nd Sem	Calculus and Geometry 42351201
		Monotone sequences and their convergence; Proof of convergence of some simple sequences. Subsequences andthe Bolzano–Weierstrass theorem (statement and examples); Limit superior and limit inferior of a bounded sequence (definitionand examples); Statement and illustrations of Cauchy convergence criterion for sequences. Definition and anecessary condition for convergence of an infinite series, Geometric series, Cauchy convergence criterion for series;	B.Sc(Prog) 4th Sem	Real Analysis 42354401
	Tutorial	Presentations based on exercise questions and doubt session.	B.Sc(H) Mathematics 4th Sem	Reimann Integrationand Series of Functions 32351402
		Presentations based on exercise questions and doubt session.	B.Sc(Prog) 4th Sem	Real Analysis 42354401
		Theorems on the continuity, derivability and integrability of the sum function of a series offunctions. Cauchy criterion for the uniform convergence of series of functions, and the Weierstrass M-test for uniform convergence. Definition of a power series, Radius of convergence.	B.Sc(H) Mathematics 4th Sem	Reimann Integrationand Series of Functions 32351402

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March	Theory	Rolle's theorem, Lagrange's mean value theorem with geometrical interpretations and simple applications, Taylor's theorem, Taylor's series and Maclaurin's series, Maclaurin'sexpansion of functions such as sinx , cos x, log(1+x), e^x, (1+x)^m.	B.Sc(Prog) 2nd Sem	Calculus and Geometry 42351201
		Positive term series, State the integral test and prove the convergence of p-series, Comparison test, Limit comparison test and examples. D'Alembert's ratio test, Cauchy's root test; Alternating series, Leibnitz's test; Absolute and conditional convergence. Sequences and series offunctions, Pointwise and uniform convergence. Test-1	B.Sc(Prog) 4th Sem	Real Analysis 42354401
	Tutorial	Practice session and doubts discussion.	B.Sc(H) Mathematics 4th Sem	Reimann Integrationand Series of Functions 32351402
		Practice session and doubts discussion.	B.Sc(Prog) 4th Sem	Real Analysis 42354401
April	Theory	Theorems on the continuity, derivability and integrability of thesum function of a series of functions. Differentiation and integration of power series, Statement of Abel's Theorem and its illustration with the help of examples. Test	B.Sc(H) Mathematics 4th Sem	Reimann Integrationand Series of Functions 32351402
		polynomial approximation and error estimation. Functions of two or more variables, Graphs and Level curves of functions oftwo variables, Partial differentiation up to second order. Test	B.Sc(Prog) 2nd Sem	Calculus and Geometry 42351201
		Uniform norm, Cauchy general principle for uniform convergence of series of functions, Weierstrass M- test. Definition of power series, Radius and interval of convergence,Power series expansions and their properties. Riemann Integration and examples, Integrability of Continuous and Monotone Functions. Test-2.	B.Sc(Prog) 4th Sem	Real Analysis 42354401
	Tutorial	Presentations based on exercise questions and doubt session.	B.Sc(H) Mathematics 4th Sem	Reimann Integrationand Series of Functions 32351402
		Presentations based on exercise questions and doubt session.	B.Sc(Prog) 4th Sem	Real Analysis 42354401

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Computer Science Department

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Name of the Faculty Member: Ms. Hunny Gaur
Department: Computer Science
Year: 2016-17

Month	Theory/ Practical	Topics	Course	Paper code/ Name
August	Theory + Practicals	• Why do we need object-oriented programming • Characteristics of object-oriented languages • Basic program construction • Operators etc.	Generic Elective for BA/BSc Hons, I Year	Introduction to Programming (32345102)
September	Theory + Practicals	• Loops and Decisions • Precedence summary • Other control statements • Structures • Functions	Generic Elective for BA/BSc Hons, I Year	Introduction to Programming (32345102)
October	Theory + Practicals	• Introduction to classes • C++ objects as physical objects and data types • Constructor function • Fundamentals of Array	Generic Elective for BA/BSc Hons, I Year	Introduction to Programming (32345102)
November	Theory + Practicals	• Introduction to inheritance • What are derived and base class • Disk file I/O with streams	Generic Elective for BA/BSc Hons, I Year	Introduction to Programming (32345102)

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Name of the Faculty Member: Ms. Hunny Gaur
Department: Computer Science
Year: 2016-17

Month	Theory/ Practical	Topics	Course	Paper code/ Name
January	Theory + Practicals	• Introduction to database • Relational data model • DBMS architecture • Introduction to SQL • Creating database and tables • Creating relationship between database tables	Generic Elective for BA/BSc Hons, I Year	Introduction to Database Systems (32345201)
February	Theory + Practicals	• Data independence • Types of database users • Modify and manage tables • Creating SQL queries • Modify, filter and view data by SQL queries	Generic Elective for BA/BSc Hons, I Year	Introduction to Database Systems (32345201)
March	Theory + Practicals	• Introduction to entity, attribute and key • Understanding relationships and relationship types • Creating E-R diagrams from user requirements • Database design using E-R diagrams	Generic Elective for BA/BSc Hons, I Year	Introduction to Database Systems (32345201)
April	Theory + Practicals	• Relational model concepts • Understanding relational constraints, primary and foreign key • Normalization	Generic Elective for BA/BSc Hons, I Year	Introduction to Database Systems (32345201)

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Physical Education Department

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Name of the Faculty Member: SUJAY JOHN K

Department: PHYSICAL EDUCATION

Year: 2016-17

ANNUAL MODE

Month		Topics	Course	Paper Name	Paper Code
July	Theory	Meaning, Definition, Need & Importance Activity, Fitness & Wellness. Benefits of Participation in Physical Activities with Specific Reference to Mental and Personal Health, Effect of Exercise on Various Physiological Systems namely Skeletal, Muscular, Circulatory and Respiratory, Introduction to Different Exercise Equipments	GE	Fitness, Aerobics and Gym Operations	C-355
	Practical	Measurement of Weight and Height, Calculating BMI (Body Mass Index)			
	Tutorial				
August	Theory	Concepts and Components of Physical Fitness (Health Related and Skill Related) Means and Methods for the Development and Maintenance of Fitness Components Measurement and Evaluation of Physical Fitness. Safety Measures and Prevention of Injuries	SEC	Fitness, Aerobics and Gym Operations	C-355
	Practical	Measurement of Fitness Components — Flexibility (Sit and Reach Test, Hip Bend and Toe Touch); Strength (Sit-ups, Leg-raise for Minimal Strength);			

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	Tutorial				
September	Theory	Nutrition and Weight Management: Concept of Nutrition and Health, Balanced Diet, Dietary Aids and Gimmicks; Energy and Activity, Calculating Calorie Intake and Expenditure Obesity and Related Health Problems: Measurement and Management Weight Management Programmes	SEC	Fitness, Aerobics and Gym Operations	C-355
	Practical	Cardiovascular Endurance: One-mile Run, Physical Efficiency Test, Harvard step Test; Muscular Endurance Bench Jumps, Sit-ups			
	Tutorial				
October	Theory	Welt-Being and Dimensions of Active Life-Style Well-being in Different Context : Active Life-style, Body Image and Environment, Obesity, Anorexia and Health-related Issues Stress Management through Relaxation, Meditation, Yoga, Recreational Activities Well-Being Through Leadership Activities Camping, Adventure Sports and Other Training Programmes	GE	Fitness, Aerobics and Gym Operations	C-355
	Practical	Self-Evaluation: Personal Health and Well-Being Developing Activity Index and Evaluation of Fitness Category			
	Tutorial				

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Month		Topics	Course	Paper Name	
January	Theory	Aerobic Fitness, Understanding of Various Forms of Aerobics: Floor Aerobics, Step-Aerobics, Weight-Aerobics and Aqua-Aerobics Training Effects of Aerobic Fitness -- Improvement of Aerobic Fitness, Aerobic Fitness Programmes		Fitness, Aerobics and Gym Operations	C-355
	Practical				
	Tutorial				
February	Theory	Gym Operations. Location and Establishment of Gym (Publicity, Policy, Reception, Information, Registration, Offer of Programmes) .	SEC	Fitness, Aerobics and Gym Operations	C-355
	Practical	Exercise Schedules, Aerobics, Fitness and Weight Management Selection and Application of Music in Aerobic Fitness Programme			
	Tutorial				

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March	Theory	Procurement, Placement and Maintenance of Gym-Equipment Marketing, Clientele, Enrolments, Record-Keeping, Social Activities, Public Relations, Individualized /Group Grooming Programme	SEC	Fitness, Aerobics and Gym Operations	C-355
	Practical	Gym Management — Costing, Balance Sheets, Promotional Plans			
	Tutorial				
April	Theory	Basic Concepts of Financial Management Gym-Instructors — Qualification, Qualities, Pay-roll, Performance - Evaluation, Grooming and Presentation	GE	Fitness, Aerobics and Gym Operations	C-355
	Practical	Yoga (Any Five Asanas)			
	Tutorial				

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