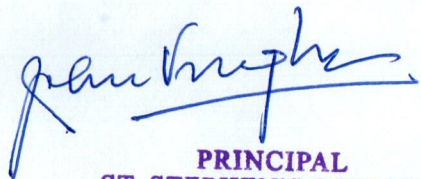




1.1.1 Lesson Plans (2019-20)


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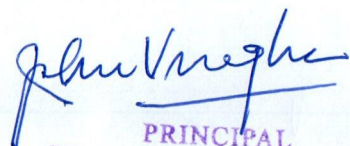


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Political Science Department


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Name of the Faculty Member: Alia Zaman
Department: Political Science
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Unit 1-Distinctive features of Indian and Western political thought	BAP Political Science Discipline Specific Elective Semester V	Themes in Comparative Political Theory
August	Theory	Unit 2- Western Thought: Thinkers and Themes a. Aristotle on Citizenship b. Locke on Rights c. Rousseau on inequality	BAP Political Science Discipline Specific Elective Semester V	Themes in Comparative Political Theory
September	Theory	Unit 2-d. J. S. Mill on liberty and democracy e. Marx and Bakunin on State Unit 3- Indian Thought: Thinkers and Themes a. Kautilya on State b. Tilak and Gandhi on Swaraj c. Ambedkar on Social Justice	BAP Political Science Discipline Specific Elective Semester V	Themes in Comparative Political Theory
October	Theory	Unit 3- c. Ambedkar and Lohia on Social Justice d. Nehru and Jayaprakash Narayan on Democracy e. Pandita Ramabai on Patriarchy	BAP Political Science Discipline Specific Elective Semester V	Themes in Comparative Political Theory

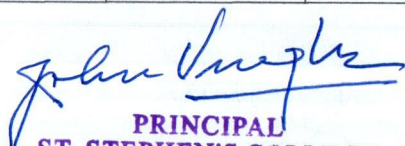
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Name of the Faculty Member: Alia Zaman
Department: Political Science
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	1. Concept of Globalisation: Globalisation debate; for and against. 2. Approaches to understanding globalisation: a. Liberal approach b. Radical approach	GE for Hons Sem-IV	Politics of Globalization
February	Theory	3. International Institutions/Regimes a. World Bank b. International Monetary Fund c. The World Trade Organisation	GE for Hons Sem-IV	Politics of Globalization
March	Theory	4. Issues in Globalisation: Alternative Perspectives on its nature and character, critical dimensions: economic, political and cultural 5. Globalisation and democracy: State, sovereignty and the civil society. 6. Globalisation and Politics in developing countries a. Globalisation and social movements b. Globalisation and the demise of Nation State	GE for Hons Sem-IV	Politics of Globalization
April	Theory	c. Globalisation and human migration 7. The inevitability of globalisation: Domestic and Global responses	GE for Hons Sem-IV	Politics of Globalization


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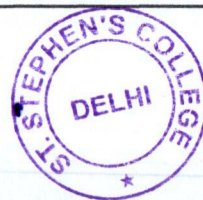




Name of the Faculty Member: PIA DAVID
Department: POLITICAL SCIENCE.
YEAR 2019-20


JULY	Presentations made on zia mody's books, ten judgements that changed india, Through the semester	Outline of the Legal system in India System of courts/tribunals and their jurisdiction in India - criminal and civil courts, writ jurisdiction, specialized courts such as juvenile courts, Mahila courts and tribunals. Role of the police and executive in criminal law administration. Alternate disputes mechanisms such as lok adalats, non - formal mechanisms		
AUGUST		Brief understanding of the laws applicable in India Constitution - fundamental rights, fundamental duties, other constitutional rights and their manner of enforcement, with emphasis on public interest litigation and the expansion of certain rights under Article 21 of the Constitution. Laws relating to criminal jurisdiction - provision relating to filing an FIR, arrest, bail search and seizure and some understanding of the questions of evidence and procedure in Cr. P.C. and related laws, important offences under the Indian Penal Code, offences against women, juvenile justice, prevention of atrocities on Scheduled Castes and Scheduled Tribes. Concepts like Burden of Proof, Presumption of Innocence, Principles of Natural Justice, Fair comment under Contempt laws. Personal laws in India: Pluralism and Democracy	4TH SEMESTER BA PROGRAMME	DEMOCRATIC AWARENESS THROUGH LEGAL LITERACY
SEPTEMBER-OCTOBER		Laws relating to contract, property; tenancy laws, labour laws, and environmental laws. Laws relating to dowry, sexual harassment and violence against women. Laws relating to consumer rights Labour laws in the context of globalisation 24		

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		<p>Laws relating to cyber crimes Anti-terrorist laws: implications for security and human rights Practical application: Visit to either a (I) court or (ii) a legal aid centre set up by the Legal Services Authority in Delhi or an NGO or (iii) a Lok Adalat, and to interview a litigant or person being counselled. Preparation of a case history</p>		
NOVEMBER-DECEMBER		<p>Critical Understanding of the Functioning of the Legal System, Legal Services Authorities Act and right to legal aid, ADR systems. What to do if you are arrested ; if you are a consumer with a grievance; if you are a victim of sexual harassment; domestic violence, child abuse, caste, ethnic and religious discrimination; filing a public interest litigation. How can you challenge administrative orders that violate rights, judicial and administrative remedies. Human Rights - emerging trends; Role of legal aid agencies, Human Rights Commissions, NGOs and civil liberties groups. Practical application - Using a hypothetical case of (for example) child abuse or sexual harassment or any other violation of a right, preparation of an FIR or writing a complaint addressed to the appropriate authority.</p>		

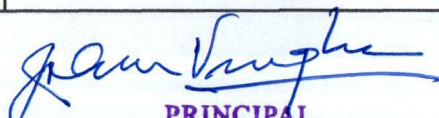

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Name of the Faculty Member: PIA DAVID
Department: POLITICAL SCIENCE.
YEAR 2019-20

Month	practical	topics	course	paper code
january	Writing research papers on institutions like parliament, both houses, and panchayats	Powers and functions of people's representatives at different tiers of governance Members of Parliament, State Legislative Assemblies, functionaries of rural and urban local self-government from Zila Parishads/Municipal Corporation to Panchayat/Ward. (Weeks 1-3)	BA P 3RD SEMESTER	Legislative Support
february	Writing research papers on institutions like parliament, both houses, and panchayats	Supporting the legislative process: How a Bill becomes a Law, Role of the Standing Committee in reviewing a Bill, Legislative Consultations, amendments to a Bill, the framing of Rules and Regulations. (Week 4) Supporting the legislative committees Types of committees, Role of committees in reviewing government finances, policy, programmes, and legislation. (Weeks 5-7)		
march	Writing research papers on institutions like parliament, both houses, and panchayats	Reading the budget document: 18 Overview of Budget Process, Role of Parliament in reviewing the Union Budget, Railway Budget, Examination of Demands for Grants of Ministries, Working of Ministries. (Weeks 8-10)		
april	Writing research papers on institutions like parliament, both houses, and panchayats	Support in media monitoring and communication: Types of media and their significance for legislators. Basics of communication in print and electronic media. (Weeks 11-12)		


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History Department

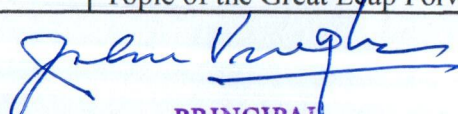
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Name: Sangeeta Luthra Sharma
Department: History
Year: 2019-20

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 19 th 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 Yen-an 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: 2019-20

Month	Theory/ Tutorials	Topics	Course	Paper code/Name
January		Crisis of Tokugawa <i>Bakuhau</i> 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 19 th century developments in Japan impacted 20 th 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		

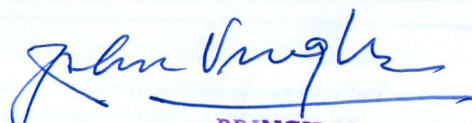
Sangeeta Luthra Sharma





Name of the Faculty Member: Dr. Amrita Tulika
Department: History
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Colonialism and forms of labour Laying the foundation of independent India- constitution, linguistic re- organization	History Hons. Semester V GE for Hons Courses	12317501/ DSE I- History of the USA: Independence to Civil War 12315355/ The Making of Contemporary India (1950- 1990s)
August	Theory	Forms of labour; American Revolution; Federalist constitution; Westward Expansion Foreign policy; Five Year Plans; Education, science and technology	Same as above Same as above	Same as above Same as above
September	Theory	Marginalization of indigenous tribes; Turner's thesis; Early capitalism; Slavery Uneven economic development- Punjab and Bihar; Political formations- Congress and Left parties; Caste politics; Dravidian movement; Women and Politics	Same as above Same as above	Same as above Same as above
October	Theory	US quest for dominance- war and diplomacy; The Civil War- politics, issues, historiography J.P. Movement and Emergency; Coalition politics; Mandal Commission; Neo- liberalism; Print and Visual Media	Same as above Same as above	Same as above Same as above


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Name of the Faculty Member: Dr. Amrita Tulika
Department: History
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	Religious and linguistic identities; assertion of caste identity; economic critique of colonial rule; rise of modern industry Reconstruction: agrarian transformation; Share-cropping; new social groups; The Gilded Age	History Hons. Semester VI History Hons. Semester VI	12311601/ Core Course- History of India (c.1857-1950) 12317601/ DSE V- History of the USA: Reconstruction to New Age Politics
February	Theory	Early nationalism; Intellectual foundations of Gandhian Nationalism; Gandhian Movements Agrarian crisis; Populism; Progressivism; New Deal; Stereotypes of women	Same as above Same as above	Same as above Same as above
March	Theory	Quit India Movement; Ambedkar; Singh Sabha and the Akali Movement; Peasants and workers; tribal movements Women and politics; Class and gender; Women's Liberation; African- American Movements	Same as above	Same as above
April	Theory	Communalism and Partition; Independence and a new state Imperialism	Same as above Same as above	Same as above Same as above

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Name of the Faculty Member: Dr. Sabina Kazmi
Department: History
2019-20

Month	Theory/ Practical/ Tutorials	Course	Paper Name	Paper Code	Topics
July to November 2019	Theory	B.A. Prog. (IInd Year) (Semester III)	History of India (c1200 – 1700)	62314360	<ul style="list-style-type: none"> Turkish incursions and establishment of Delhi Sultanate Political evolution – Gujarat and Vijayanagar, Mughal state establishment, expansion, nature, Akbar and Rajput 17th century developments- rise of Sikhs and Maratha polities Art and Architecture - case studies of Qutub complex, Hampi, Fatehpur Sikri Bhakti & Sufi traditions literature interaction etc.
	Theory	B.A. Hons History (Semester III)	History of India (1200 – 1500)	12311348	<ul style="list-style-type: none"> Sources - Sanskrit and Vernacular (Premakhyan) Inscriptions and architecture (Hampi) Consolidation of identities -Rajputs and warrior lineages Political culture – Vijayanagar and Gujrat Bhakti & Sant Traditions - Gender roles
	Theory	GE-III	Cultural diversity in India	62315517	<p>This paper will be shared between Dr. Sabina Kazmi and Dr. Digvijay Singh</p> <ul style="list-style-type: none"> Folk Traditions and culture of orality – Jataka & Premakhayans Religious Processes- Bhakti and Sufi traditions Food and Attire- cultural implications


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Name of the Faculty Member: Dr. Sabina Kazmi
Department: History
2019-20

Month	Theory/ Practical/ Tutorials	Course	Paper Name	Paper Code	Topics
January – April -2020	Theory	B.A. Prog. – IIIrd Year (Semester V)	Cultural Transformations in Early Medieval Europe		<ul style="list-style-type: none"> • Scientific Revolution and Enlightenment • Literacy and Artistic developments • Women and Public sphere • Popular culture – magic, mentalities and family
	Theory	GE	Delhi Through the Ages – From Colonial to Contemporary Period		<ul style="list-style-type: none"> • 19th c. Delhi – Developments • 1857 in Delhi and aftermath • Imperial Delhi- Planning & Significance • Partition in Delhi • Contemporary Delhi – Expansion, Migration, dislocation, public culture.

Sabina Kazmi

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Name of the Faculty Member: Mr. Dias Mario Antony
Department: History
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper Name	Unique Paper Code
July - November	Theory	<p>I. Definition and history of development (with special reference to India)</p> <p>II. Types of archives and museums:</p> <p>[a] Understanding the traditions of preservation in India, collection policies, ethics and procedures</p> <p>[b] Collection: field exploration, excavation, purchase, gift and bequests, loans and deposits, exchanges treasure trove confiscations and others</p> <p>[c] Documentation: accessioning, indexing, cataloguing, digital documentation and deaccessioning</p> <p>[d] Preservation: curatorial care, preventive conservation, chemical preservation and restoration</p> <p>III. Museum presentation and exhibition</p> <p>IV. Museums, archives and society: education and communication outreach activities</p>	BA Hons. History (II Year)	Archives and Museums (CBCS)	12313353
	Field Work	Visit to National Archives of India and National Museum.	BA Hons. History (II Year)	Archives and Museums (CBCS)	12313353
	Theory	I. Articulating political authority: monuments and rituals	BA Hons. History (II Year)	History of India IV (CBCS)	12311348

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		<p>II. Society and economy [a] Ecological context; agricultural production [b] Technology and changes in society [c] Monetization; market regulations; urban centers; trade and craft III. Hindu-Muslim' relations reconsidered</p>			
	Theory	<p>I. Upheaval in religion [a] The Papacy and its critics [b] The spread of Protestant sects in Northern Europe [c] Counter Reformation and religious strife [d] The economic and cultural impact of the Reformations II. The Conquest of the New World: material, social and cultural aspects</p>	BA Programme (III Year)	Cultural Transformations in Early Modern Europe – I (1500-1800) (CBCS)	62317515
	Theory	<p>This is a shared paper. Mr. Dias Mario Antony will be teaching the following section/s:</p> <p>I. Society, culture and religion: Bhakti --Kabir and Mira Bai; Sufism – Nizamuddin Auliya; Sufism in popular literature from the Deccan: Chakki-Nama and Charkha-Nama. II. Economy and integrated patterns of exchange: rural and urban linkages; commercial practices (Usury and banking); maritime trade and non-agrarian production.</p>	BA Programme (II Year)	History of India 1206-1707 (CBCS)	62311345
	Theory	<p>I. Food and attire.</p>	BA Programme (III Year)	Cultural Diversity in India (CBCS)	62315517

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Name of the Faculty Member: Mr. Dias Mario Antony
Department: History
Year: 2019-2020

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name	Unique Paper Code
January – April	Theory	I. Introduction: defining popular culture; understanding its relationship to high culture II. Visual expressions: folk art, calendar art, photography III. Performance: theatre and music; folktales, songs, swang and nautanki; identifying themes and characters IV. The audio-visual: cinema, television and internet. Indian cinema: mapping the influence of the national struggle for independence (1930s and 1940s), idealized nationalism (1950s), disillusionment and the anti- establishment mood (1970s and 80s). Expression of popular culture on television. Impact of the social media V. Fairs, festivals and rituals: disentangling mythological stories; patronage; regional variations	BA Hons. History (II Year)	Understanding Popular Culture (CBCS)	12313406
	Field Work	A visit to an exhibition/fair/festival.	BA Hons. History (II Year)	Understanding Popular Culture (CBCS)	12313406
	Theory	I. Uneven development – Punjab, Bihar (case studies) II. Democracy at work [a] Left parties [b] Naxalbari [c] Women and politics	BA Hons. History (III Year)	The Making of Contemporary India (1950-1990s) – CBCS	12317614

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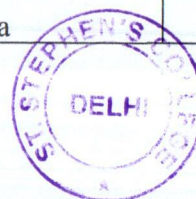
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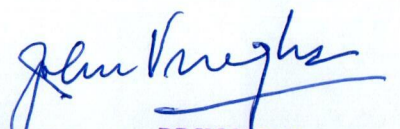
		[d] Hindu Code Bill [e] Status of Women Report III. The Public Sphere [a] Print media [b] Institutions of art and culture [c] Visual Media: cinema and television			
	Tutorial	Discussion of supplementary readings.	BA Hons. History (III Year)	The Making of Contemporary India (1950-1990s) – CBCS	12317614
	Theory	I. From the Vedic tradition to Puranic Hinduism II. The renunciatory traditions – Buddhism and Jainism III. Religious institutions; pilgrimage; patronage in early India IV. Muslim communities of belief: textual and mystical practices V. The making of medieval religious spaces (Vrindavan in the 16th and 17th centuries) VI. Conversions and identities VII. Plurality and shared spaces (19th and early 20th century) VIII. Identity and the politics of religion (late 19th and 20th century) IX. Secularism and the modern nation state	Generic Elective (II Year)	Religion and Religiosity (CBCS)	12315405
	Tutorial	Discussion of supplementary readings.	Generic Elective (II Year)	Religion and Religiosity (CBCS)	12315405
	Theory	I. Understanding key terms in art appreciation: art, craft, etc. II. Sculpture [a] Iconography: Hindu, Buddhist and Jaina	BA Programme (II Year)	Introducing Indian Art (CBCS)	62313426

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		[b] Modern sculpture III. Architecture [a] Temple architecture -- Nagara, Dravida and Vesara [b] Mosques and Mausoleums -- Qutb Complex; Humayun's tomb; Jama Masjid; Taj Mahal (any one) [c] Colonial architecture [e] Modern and contemporary architecture IV. Painting [a] Mural painting -- Ajanta [b] Mughal and Rajput- miniature styles [c] Raja Ravi Verma and the Bengal School [d] Modern and contemporary artists			
	Field Work	Visit a museum/monument/art gallery.	BA Programme (II Year)	Introducing Indian Art (CBCS)	62313426


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Economics Department

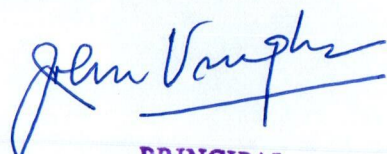

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Name of the Faculty Member: Poonam Kalra
Department: Economics. Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
August	Theory(2 per week)	Introduction to the course: How can the representation and analysis of data help us study real-world problems. Publicly available data sets	B.A.(Hons.) Economics	HS31(Data Analysis)
	Practical(4 per week)	Download R, Import a .csv file check for the type of data		
September	Theory(2 per week)	Data preparation, Data cleaning using EXCEL, pivot tables	B.A.(Hons.) Economics	HS31(Data Analysis)
	Practical(4 per week)	Dirty data cleaned using "Find and Replace" and "VLOOKUP" functions. Built pivot tables using data		
October	Theory(2 per week)	Data Visualisation, Probability distributions	B.A.(Hons.) Economics	HS31(Data Analysis)
	Practical(4 per week)	Plot Histogram, trend lines, bar charts, pie charts etc. Finding cumulative probabilities using EXCEL functions		
November	Theory(2 per week)	Sampling Distribution and Hypothesis testing	B.A.(Hons.) Economics	HS31(Data Analysis)
	Practical(4 per week)	Using EXCEL commands for t, F, Normal distribution and Hypothesis testing		

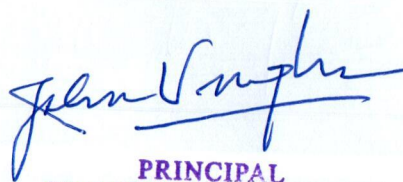

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Name of the Faculty Member: Poonam Kalra
Department: Economics. Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory(5 per week)	Simple linear regression model	B.A.(Hons.) Economics)	HC43(Introductory Econometrics)
	Tutorial(1 per week)	Discussed questions of chapter 2 and 3 (Gujarati) Chapter 2 (Dougherty)		
February	Theory(5 per week)	Multiple Linear regression model	B.A.(Hons.) Economics)	HC43(Introductory Econometrics)
	Tutorial(1 per week)	Discussed questions of chapter 4 and 5(Gujarati) Chapter 3 (Dougherty)		
March	Theory(5 per week)	Violations of classical assumptions	B.A.(Hons.) Economics)	HC43(Introductory Econometrics)
	Tutorial(1 per week)	Discussed questions of chapter 8,9 and 10 (Gujarati) Chapter 7,10(Dougherty)		
April	Theory(5 per week)	Specification Errors	B.A.(Hons.) Economics)	HC43(Introductory Econometrics)
	Tutorial(1 per week)	Discussed questions of chapter 7 (Gujarati) Chapter 26(Dougherty)		


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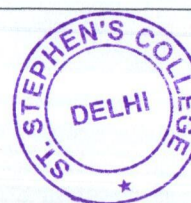


Name: Leema Mohan Paliwal

Department: Economics. Year: 2019-20

Month	Theory/Tutorials	Topics	Course	Paper Name/ Code
July	Theory ,Tutorials	Ten Principles of Economics	BA Programme	Principles of Microeconomics I
	Theory , Tutorials	Consumer theory: Indifference curves modelled	BA Hons	Intermediate Microeconomics I
August	Theory, Tutorials	Demand and Supply Analysis	BA Programme	Principles of Microeconomics I
	Theory , Tutorials	Consumer Theory: Utility optimization, demand curves	BA Hons	Intermediate Microeconomics I
	Tutorials	Ten principles, Demand and Supply Analysis	BA Hons.	Introductory Microeconomics
September	Theory, Tutorials	Taxation and welfare in Demand and Supply Models	BA Programme	Principles of Microeconomics I
	Theory , Tutorials	Substitution and income effect, Slutsky equation, Theory of Revealed preference	BA Hons	Intermediate Microeconomics I
	Tutorials	Taxation and welfare in Demand and Supply Models	BA Hons.	Introductory Microeconomics
October	Theory, Tutorials	Consumer Theory	BA Programme	Principles of Microeconomics I
	Theory, Tutorials	Production Theory and Cost function	BA Hons	Intermediate Microeconomics I
	Tutorials	Consumer Theory, Producer Theory	BA Hons.	Introductory Microeconomics
November	Theory, Tutorials	Producer Theory Costs and perfect Competition	BA Programme	Principles of Microeconomics I
	Theory , Tutorials	Perfect Competition profit maximization, Profit Function	BA Hons	Intermediate Microeconomics I
	Tutorials	Producer Theory Costs and perfect Competition	BA Hons.	Introductory Microeconomics

John Singh





Name: Leema Mohan Paliwal
Department: Economics. Year: 2019-20

Month	Theory/Tutorials	Topics	Course	Paper Name/ Code
January	Tutorials	National Income Accounting	General Elective	Introductory Macroeconomics
	Theory, Tutorials	General Equilibrium and Welfare	B A Hons Economics	Intermediate Microeconomics II
February	Tutorials	Money Demand and Money Supply	General Elective	Introductory Macroeconomics
	Theory, Tutorials	Game Theory	B A Hons Economics	Intermediate Microeconomics II
March	Tutorials	Classical Model, Simple Keynesian Model	General Elective	Introductory Macroeconomics
	Theory, Tutorials	Imperfect Competition	B A Hons Economics	Intermediate Microeconomics II
April	Tutorials	IS-LM Model, Inflation	General Elective	Introductory Macroeconomics
	Theory, Tutorials	Asymmetric Information, Externalities, Public Goods	B A Hons Economics	Intermediate Microeconomics II

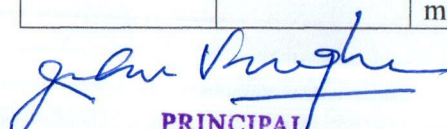
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Name of the Faculty Member: Manjula Singh
Department: Economics
Year: 2019-2020

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 <u>Consumption</u> Keynesian consumption function; Fisher's theory of optimal intertemporal choice; lifecycle and permanent income hypotheses; rational expectations and random-walk of consumption expenditure. <u>Investment</u> Determinants of business fixed investment; residential investment and inventory investment. <u>Demand for Money</u> 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: 2019-2020

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory & Tutorials	<u>Economic growth</u> Harrod-Domar model; Solow model; Golden rule, technological progress, economics of ideas, engines of growth, modern theories of endogenous growth	BA (H) Economics	12271402 Intermediate Macroeconomics- II
February	Theory & Tutorials	<u>Business cycles</u> Real business cycle theory; new Keynesian models of sticky prices	BA (H) Economics	12271402 Intermediate Macroeconomics- II
March	Theory & Tutorials	<u>Open economy models</u> Short-run open economy models; Mundell-Fleming model; exchange rate determination; purchasing power parity; asset market approach; Dornbusch's overshooting model; monetary approach to balance of payments; international financial markets	BA (H) Economics	12271402 Intermediate Macroeconomics- II
April	Theory & Tutorials	<u>Fiscal and monetary policy</u> Active or passive; monetary policy objectives and targets; rules versus discretion: time consistency; the government budget constraint; government debt and Ricardian equivalence	BA (H) Economics	12271402 Intermediate Macroeconomics- II

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**Name: Saumaly Ghosh
Department: Economics
Academic year: 2019-20**

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	Heckscher 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

Saumaly Ghosh


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Name: Saumaly Ghosh
Department: Economics
Academic year 2019-20

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

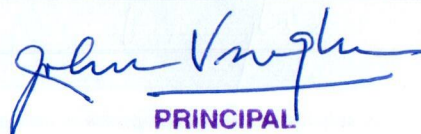

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Name: Divya Singh
Department: Economics
Year: 2019-2020

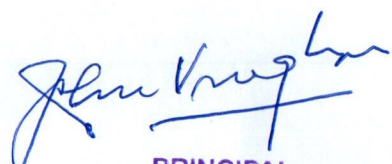
Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	1. Introduction to Development Economics 2. Basic concepts in Development Economics (relationship between growth and development, factors affecting growth and development)	B.A. (Honours) Economics III Year (Core)	Development Economics I
July	Tutorials	1. Solving analytical and numerical problems from the topics and texts covered in lectures 2. Discussion of some supplementary material (Some texts discussed include: Why Nations Fail by Acemoglu and Robinson, The Colonial Origins of Comparative Development by Acemoglu)	B.A. (Honours) Economics III Year (Core)	Development Economics I
August	Theory	1. Basic concepts in Development Economics (continued) 2. Indices of development and their trends 3. The Human Development Index	B.A. (Honours) Economics III Year (Core)	Development Economics I
August	Tutorials	1. Solving analytical and numerical problems from the topics and texts covered in lectures 2. Literature on PPP and NER, Development Indices other than the HDI	B.A. (Honours) Economics III Year (Core)	Development Economics I
September	Theory	1. Growth Models (Harris-Todaro, Solow) 2. New Growth Theories	B.A. (Honours) Economics III Year (Core)	Development Economics I


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September	Tutorials	1. Solving analytical and numerical problems from the topics and texts covered in lectures	B.A. (Honours) Economics III Year (Core)	Development Economics I
October	Theory	1. Concepts and Measurement of Poverty and Inequality 2. Trends in Poverty and Inequality	B.A. (Honours) Economics III Year (Core)	Development Economics I
October	Tutorials	1. Solving analytical and numerical problems from the topics and texts covered in lectures 2. Discussion of some supplementary material on poverty and inequality (Deaton and Dreze on nutrition trends, some relevant topics from Banerjee and Duflo's Poor Economics)	B.A. (Honours) Economics III Year (Core)	Development Economics I
November	Theory	1. Political Institutions and the Functioning of the State (Governance of common Property Resources, Corruption, Literature on Comparative Development and theories of growth and development)	B.A. (Honours) Economics III Year (Core)	Development Economics I
November	Tutorials	1. Solving analytical and numerical problems from the topics and texts covered in lectures	B.A. (Honours) Economics III Year (Core)	Development Economics I

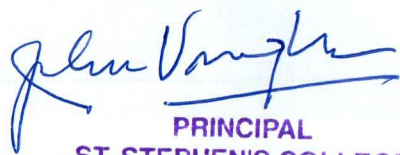

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Name: Divya Singh
Department: Economics
Year: 2019-2020

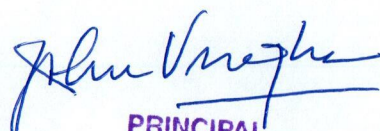
Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	1. Macroeconomic Trends and Policies (Trends pertaining to the Indian Economy, Concepts and Trends in Financial Globalization External Sector and Trade Policy, Labour Laws)	B.A. (Honours) Economics III Year (Core)	Indian Economy II
January	Tutorials	1. Discussion of Supplementary Reading Material (particularly on India's Financial sector and labour laws)	Same as Above	Same as Above
February	Theory	1. Macroeconomic Trends and Policies (continued) 2. Agriculture Sector (Trends and Policies)		
February	Tutorials	1. Discussion of Supplementary Reading Material (particularly on labour laws and agriculture policy reform)		
March	Theory	1. Agriculture Sector (Trends and Policies) (continued) 2. Concepts, trends and policies in the Industrial and Manufacturing Sectors of the Indian Economy		
March	Tutorials	1. Discussion of supplementary reading material		
April	Theory	1. Concepts, trends and policies in the Industrial and Manufacturing Sectors of the Indian Economy 2. Discussion of India's Service Sector		
April	Tutorials	1. Discussion of supplementary reading material		


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English Department



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Name of the Faculty Member: Dr. Karen Gabriel
Department: English
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory+ Tutorials	Introduction to American Literature; literature written by writers of European and African descent; Transcendentalism, pre- and post-civil war America, Slavery and the Civil Rights Movement.	BA (Hons) English, II Year (Core)	American Literature (12031301)
August	Theory+ Tutorials	Introduction to Toni Morrison; Introduction to African American Literature and its varied concerns. Introduction to Black Women's Writings. Start with Morrison's novel 'Beloved'.	BA (Hons) English, II Year (Core)	American Literature (12031301)
September	Theory+ Tutorials	Social Realism and the American Novel. Finish Morrison's 'Beloved'. Reflections on the idea of the 'American Dream'. Start with short stories: Edgar Allen Poe's 'The Purloined Letter'.	BA (Hons) English, II Year (Core)	American Literature (12031301)
October-November	Theory+ Tutorials	Continuation with short stories. Introduction to the authors and their literary concerns: F. Scott Fitzgerald's 'The Crack Up' and William Faulkner's 'Dry September'. Folklore and American literature.	BA (Hons) English, II Year (Core)	American Literature (12031301)


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Name of the Faculty Member: Dr. Karen Gabriel

Department: English

Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory+ Tutorials	James Monaco's 'The Language of Film: Signs and Syntax'; different ways to read and interpret film; montage, mise-en-scene etc. and related theories.	BA (Hons) English, III Year (DSE)	Literature and Cinema (12037614)
February	Theory+ Tutorials	Introduction to William Shakespeare and Elizabethan England; Reading of the play 'Romeo and Juliet'.	BA (Hons) English, III Year (DSE)	Literature and Cinema (12037614)
March	Theory+ Tutorials	Screening of the cinematic adaptations of 'Romeo and Juliet' and analysis of these films: Romeo and Juliet (1968, dir. by Franco Zeffirelli) and Romeo + Juliet (1996, dir. By Baz Luhrmann)	BA (Hons) English, III Year (DSE)	Literature and Cinema (12037614)
April	Theory+ Tutorials	Theories of adaptation: Linda Hutcheon's 'On the art of adaptation', and Thomas Leitch's 'Adaptation Studies at Crossroads'	BA (Hons) English, III Year (DSE)	Literature and Cinema (12037614)

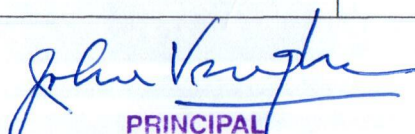
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Name: Dr. Smita Gandotra
Department: English
Year: 2019-20

Month	Theory and Tutorials	Topics	Course and Paper Title	Paper code
July	Subhash and Durgabai Vyam's Bhimayana Rabindranath Tagore's Gitanjali; Premchand's story "Kafan" and Ismat Chughta's story "Lihaf"	(a) Graphic books, history and context (b) Tagore and the Nobel, Premchand and the question of caste, same sex love in Indian writing	English Honours; Popular Literature English Honours; Modern Indian Writings in English Translation	Popular Literature, 12031302 Modern Indian Writings in English Translation, 12037501
August	Subhash and Durgabai Vyam's Bhimayana Saadat hasan Manto's Toba Tek Singh and Fakir Mohan Senapati's Rebati	(a) A comparison between Amar Chitra Katha and Vavayana graphic books (b) Partition literature and the theme of gender, education and disease in early Indian literature	English Honours; Popular Literature English Honours, Modern Indian Writings in English Translation	Popular Literature, 12031302 Modern Indian Writings in English Translation, 12037501
September	Shyam Selvadurai's Funny Boy Dharamvir Bharati's Andha Yug	(a) Conflict literature and the Sri Lankan civil war in literature (b) Indian drama, history and context	English Honours; Popular Literature English Honours, Modern Indian Writings in English Translation	Popular Literature, 12031302 Modern Indian Writings in English Translation, 12037501
October	Shyam Selvadurai's Funny Boy Dharamvir Bharati's Andha Yug and Muktibodh's poetry	(a) Role playing, gender and violence in Funny Boy (b) Experiments in modern Hindi poetry	English Honours; Popular Literature English Honours, Modern Indian Writings in English Translation	(a) Popular Literature, 12031302 (b) Modern Indian Writings in English Translation, 12037501

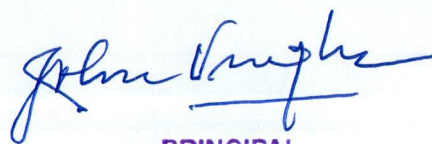

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**Name: Dr. Smita Gandotra
Department: English
Years: 2019-20**

Month	Theory/ Tutorials	Topics	Course and Paper Title	Paper code/ Name
January	(a) Anita Desai's In Custody (b) Chinua Achebe's Things Fall Apart	(a) Indian writing in English, history, reception and significant periods (b) The postcolonial novel	(c) English Honours, Indian Writings in English (d) English Honours, Postcolonial Literatures	(a) Indian Writings in English; 12031201 (b) Postcolonial Literatures; 12031602
February	(a) Anita Desai's In Custody (b) Chinua Achebe's Things Fall Apart	(a) Deven and Nur, In Custody, the Hindi-Urdu debate (b) Okonkwo, Nwoye, the structures of Igbo society	(c) English Honours, Indian Writings in English (d) English Honours, Postcolonial Literatures	(a) Indian Writings in English; 12031201 (b) Postcolonial Literatures; 12031602
March	(a) Anita Desai's In Custody and Kamala Das's poetry (b) Pablo Neruda, Derek Walcott's and Mamang Dai's poetry	(a) The women of In Custody and gender in Indian poetry (b) Postcolonial poetry, resistance, and alternative locations	(c) English Honours, Indian Writings in English (d) English Honours, Postcolonial Literatures	(a) Indian Writings in English; 12031201 (b) Postcolonial Literatures; 12031602
April	(a) Nissim Ezekiel, Robin Ngangom and Meena Kandasamy's poetry (b) The short stories of Bessie Head, Ama Ata Aidoo and M. M. Vinodini	(a) The Indian poets of the 1960s in Mumbai, the Shillong school of poetry and gender and caste in Indian poetry (b) Gender and the postcolonial story	(c) English Honours, Indian Writings in English (d) English Honours, Postcolonial Literatures	(a) Indian Writings in English; 12031201 (b) Postcolonial Literatures; 12031602

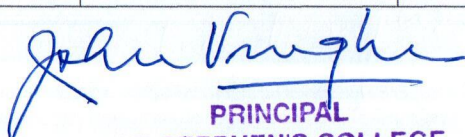

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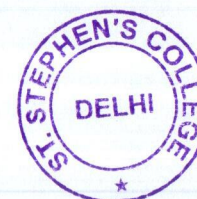




Name of the Faculty Member: Themeem T
Department: English
Year: 2019-20

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 <i>The Glass Menagerie</i>	B A Hons II Year	American Literature

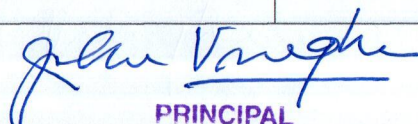

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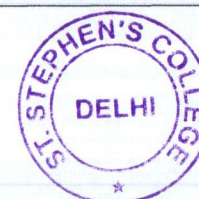




Name of the Faculty Member: Themeem T.
Department: English
Year: 2019-20

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	<i>Basti</i> by Intizar Hussain	III BA Hons	Partition Literature

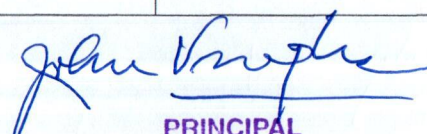

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Name of the Faculty Member: Ann Susan Aleyas
Department: English
Year: 2019-2020

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Introduction to the terms 'Indian', 'Classical' and 'Literature' Introduction (cont..) through discussion of the following allotted readings. Introduction to terms such as "Dharma", "Purusarthas", "Shruti", "Smriti", "Itihasa" etc. Introduction to Ramayana and <i>Mahabharata</i> focusing on its generic classification as 'epics' and as "mahakavyas"/"panchamveda" etc. This session will also involve readings from selections in <i>Adi Parva/ Book of the Beginnings</i>	B.A.English (Hons) – I (Semester I)	Indian Classical Literature
August	Theory	Introduction to "Dicing" and the "Sequel to Dicing" from the <i>Mahabharata</i> Close reading and Discussions of the "Dicing" Close reading and Discussions of the "Sequel to Dicing"	B.A.English (Hons) – I (Semester I)	Indian Classical Literature
September	Theory	Student Presentations and Discussions on <i>Natyashastra</i> . Introduction to Rasa Theory Introduction to <i>Mrcchakatika</i> by Shudraka Close reading and discussion of the various themes in <i>Mrcchakatika</i> .	B.A.English (Hons) – I (Semester I)	Indian Classical Literature
October	Theory	Revision of sections from <i>Mahabharata</i> and <i>Mrcchakatika</i> . Discussion of secondary readings.	B.A.English (Hons) – I (Semester I)	Indian Classical Literature



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Name of the Faculty Member: Ann Susan Aleyas
Department: English
Year: 2019-2020

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 <i>Colour Purple</i>	B.A.English (Hons) – III (Semester V)	Women's Writing
February	Theory	Close reading and analysis of Alice Walker's <i>Colour Purple</i> Thematic Discussion of Alice Walker's <i>Colour Purple</i> 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 <i>Breast Stories</i> 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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Name of the Faculty Member: Naveen John Panicker
Department: English
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Introduction to Realism, 19 th Century Russian politics and literature, themes and tropes, cultural and social developments etc.	BA (Hons) English, III Year (DSE)	Nineteenth Century European Realism (12037504)
August	Theory+ Tutorials	Introduction to Dostoevsky, Existentialism, Nihilism, Intellectual Ideas in 19 th Century Russia, Enlightenment Influences on Russian thought and literature; start with Crime and Punishment	BA (Hons) English, III Year (DSE)	Nineteenth Century European Realism (12037504)
September	Theory+ Tutorials	Finish Crime and Punishment; Nietzsche's Übermensch vs Raskolnikov's 'The Extraordinary Man'; Dostoevsky and the notion of Christian suffering	BA (Hons) English, III Year (DSE)	Nineteenth Century European Realism (12037504)
October	Theory+ Tutorials	Introduction to Turgenev; start with Fathers and Sons; social and political and agrarian transformations in 19 th Century Russia; the popularity of intellectual/rational nihilism.	BA (Hons) English, III Year (DSE)	Nineteenth Century European Realism (12037504)

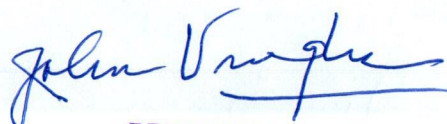
John Panicker
PRINCIPAL
ST. STEPHEN'S COLLEGE
DELHI-110007





Name of the Faculty Member: Naveen John Panicker
Department: English
Year: 2019-20


Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	Introduction to the social, political, religious and monarchical changes in 18 th century England; popular intellectual ideas of the time period: Locke, Hobbes, Rousseau, Godwin, Wollstonecraft etc.	BA (Hons) English, II Year (Core)	British Literature: 18 th Century (12031401)
February	Theory+ Tutorials	Introduction to 18 th century drama, Comedy of Manners, 18 th century aristocracy; Introduction to William Congreve; begin with Way of the World.	BA (Hons) English, II Year (Core)	British Literature: 18 th Century (12031401)
March	Theory+ Tutorials	Introduction to satire, its types and objectives; Introduction to Jonathan Swift and Swiftian Satire; rise of travel writing, the fascination with the exotic and the form of the novel; Begin Gulliver's Travels.	BA (Hons) English, II Year (Core)	British Literature: 18 th Century (12031401)
April	Theory+ Tutorials	The satire on England, Science and Religion; finish Books 3 and 4 from Gulliver's Travels; Cinematic adaptations of Gulliver's Travels	BA (Hons) English, II Year (Core)	British Literature: 18 th Century (12031401)


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Philosophy Department

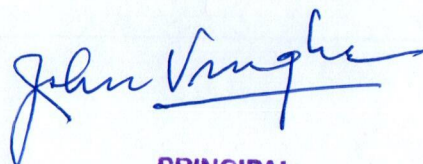

**PRINCIPAL
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Name of the Faculty Member: **Dr Silika Mohapatra**
Department: **Philosophy**
Year: **2019-20**

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July		Basic Logical Concepts Descartes/Spinoza Descartes	BAH Philo I Sem BAH Philo III Sem BAH Philo V Sem	Logic History of Western Philosophy Philosophy of Mind
August		Language/Logic Leibniz/Locke Gilbert Ryle	BAH Philo I Sem BAH Philo III Sem BAH Philo V Sem	Logic History of Western Philosophy Philosophy of Mind
September		Aristotelian Logic Berkeley/Hume J.J.C. Smart	BAH Philo I Sem BAH Philo III Sem BAH Philo V Sem	Logic History of Western Philosophy Philosophy of Mind
October		Informal Fallacies Kant Hilary Putnam/Frank Jackson	BAH Philo I Sem BAH Philo III Sem BAH Philo V Sem	Logic History of Western Philosophy Philosophy of Mind


**PRINCIPAL
ST. STEPHEN'S COLLEGE
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Name of the Faculty Member: **Dr Silika Mohapatra**

Department: **Philosophy**

Year: **2019-20**

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January		Morality/Relativism Art and Experience Scepticism	BAH Philo Sem II BAH Philo Sem IV BAH Philo Sem VI	Ethics Art and Film Appreciation Knowledge and Scepticism
February		Aristotle/Mill/Kant Film as Art Form Knowledge	BAH Philo Sem II BAH Philo Sem IV BAH Philo Sem VI	Ethics Art and Film Appreciation Knowledge and Scepticism
March		Applied Ethics Art, Social Values, Morality Conditional Theory	BAH Philo Sem II BAH Philo Sem IV BAH Philo Sem VI	Ethics Art and Film Appreciation Knowledge and Scepticism
April		Indian Ethics Art and Communication through Films Foundationalism	BAH Philo Sem II BAH Philo Sem IV BAH Philo Sem VI	Ethics Art and Film Appreciation Knowledge and Scepticism

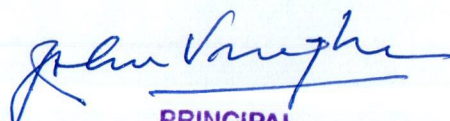

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Name of the Faculty Member: Alphy Geever
Department: Philosophy
Year: 2019-2020

Month	Theory/ Tutorials	Topics	Course	Paper Code/ Name
July		Unit-1 Understanding Political Philosophy What is Political Theory? (Bhargava) [Introduction to Social Contract]	BA (Hons) II Year	12101302 Social and Political Philosophy
August		Unit I: Understanding Political Philosophy On Enlightenment (Kant) On Liberty: The Second Treatise on Civil Governance (Locke) Justice as Fairness: Fundamental Ideas (Rawls) [Two Concepts of Liberty (Berlin)] Unit II: Communitarianism, Multiculturalism, Minority Rights Multiculturalism: Examining the Politics of Recognition (Taylor) Multicultural Citizenship: Justice and Minority Rights (Kymlicka)		
September		Unit III: Contemporary Indian Thinkers Nationalism in the West (Tagore) Hind Swaraj: Critique of Modern Civilisation (Gandhi) Radical Humanism: New Political Philosophy (Roy) Democracy: Caste, Class, and Democracy (Ambedkar, Rodriguez) [Three Hundred Ramayanas (Ramanujan)]		
October		Unit IV: Contemporary Indian Social and Political Movements A Dalit Feminist Point of View (Rege) Ambedkarism: The Theory of Dalit Liberation (Omvedt) Political Theory: An Introduction – Gender (Menon)		

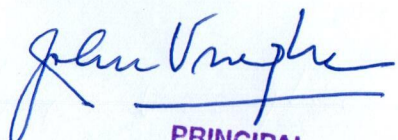

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Name of the Faculty Member: Alphy Geever
Department: Philosophy
Year: 2019-2020

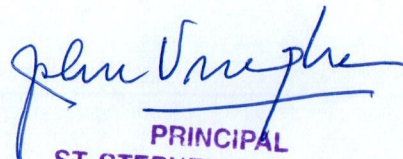
Month	Theory Practical/ Tutorials	Topics	Course	Paper Code/ Name
January		Meditations on First Philosophy (Descartes) Method of Doubt	BA (Prog) MIL IV II Year	
February		Meditations on First Philosophy (Descartes) Mind Body Dualism		
March		Immaterialism (Berkeley) Three Dialogues between Hylas and Philonous <i>Tutorial Readings</i> [Empiricism, Idealism (SEP)]		
April		Kant Introduction to Critique of Pure Reason <i>Tutorial Reading</i> [Transcendental Aesthetic (Lorne Falkenstein)]		


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Sanskrit Department


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Name: A.D. Mathur
Department: Sanskrit
Year: 2019-21

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

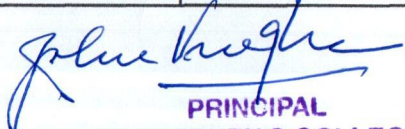
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Name: A.D. Mathur
Department: Sanskrit
Year: 2019-21

Month	Theory/Tutorials	Topics	Course	Paper code/ Name
January	Theory and Tutorials	Gītā : Cognitive and emotive apparatus Unit: I Hierarchy of <i>indriya</i> , <i>manas</i> , <i>buddhi</i> and <i>ātman</i> Role of the <i>ātman</i> Mind as a product of <i>prakṛti</i> Properties of three <i>guṇas</i> 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; <i>Rajoguṇa</i> 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 kartṛbhāva ; 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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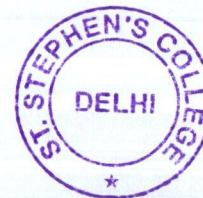




Name of the Faculty Member: Abhay Singh
Department: Sanskrit
Year: 2019-20

Month	Theory/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Vedic Literature Teaching various aspects of Saṁhitā (R̥k, Yajur, Sāma, Atharva) time, subject- matter, religion & Philosophy, social life. Brāhmaṇa, Āraṇyaka, Upaniṣad, Vedāṅga (Brief Introduction)	B.A. (hons) Sanskrit	C-2 Critical Survey of Sanskrit Literature
August	Theory	Rāmāyaṇa- Rāmāyaṇa-time, subject-matter. Rāmāyaṇa as a Source Text and its Cultural Importance Rāmāyaṇa as an Ādikāvya. Mahābhārata- Mahābhārata and its Time, Development, and subject matter Encyclopaedic nature, as a Source Text, Cultural Importance. Purāṇas : Subject matter, Characteristics Social, Cultural and Historical Importance.	B.A. (hons) Sanskrit	C-2 Critical Survey of Sanskrit Literature
September	Theory	General Introduction to Vyākaraṇa, Darśana and Sāhityaśāstra Brief History of Vyākaraṇaśāstra Major schools of Indian Philosophy Cārvāka, Bauddha, Jaina, Sāṅkhya- yoga.	B.A. (hons) Sanskrit	C-2 Critical Survey of Sanskrit Literature
October	Theory	Six major Schools of Indian Poetics-Rasa, Alamkāra, Rīti, Dhvani, Vakrokti and Aucitya.	B.A. (hons) Sanskrit	C-2 Critical Survey of Sanskrit Literature

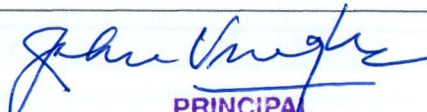

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Name of the Faculty Member: Abhay Singh
Department: Sanskrit
Year: 2019-20

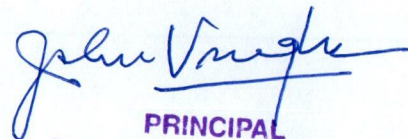
Month	Theory/Tutorials	Topics	Course	Paper code/ Name
January	Theory	Gītā: Cognitive and emotive apparatus Unit: I Hierarchy of <i>indriya</i> , <i>manas</i> , <i>buddhi</i> and <i>ātman</i> Role of the <i>ātman</i> Mind as a product of <i>prakṛti</i> Properties of three <i>guṇas</i> and their impact on the mind.	B.A. (hons) Sanskrit	C-4 Self Management in the Gītā
February	Theory	Gītā: Controlling the mind Confusion and conflict in mind Nature of conflict Causal factors – Ignorance Rajoguṇa Means of controlling the mind Meditation–difficulties procedure Balanced life, Diet control, Physical and mental discipline.	B.A. (hons) Sanskrit	C-4 Self Management in the Gītā
March	Theory	Means of conflict resolution in Gītā Importance of knowledge Clarity of buddhi . Process of decision making Control over senses Surrender of kartṛbhāva ; Desirelessness Putting others before self	B.A. (hons) Sanskrit	C-4 Self Management in the Gītā
April	Theory	Gītā: Self management through devotion Surrender of ego Abandoning frivolous debates Acquisition of moral qualities	B.A. (hons) Sanskrit	C-4 Self Management in the Gītā


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Hindi Department

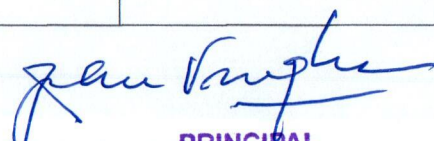

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Name of the Faculty Member: Dr. Abhishek Mishra
Department: Hindi
Year: 2019-20 (Jan-May)

Month	Theory/ Tutorials	Topics	Course	Paper code/ Name
January	Theory & Tutorial	Unit 1- Hindi Bhasha Ka Uddbhav Evam Vikas	B.A. Prog 1 st Year IIInd Sem. Hindi B, MIL Hindi Bhasha Aur Sahitya	62051203
	Theory & Tutorial	Unit 1- Kala Vidha Ke Roop Men Cinema Aur Uske Siddhant	B.A. Prog 3 rd Year, VIth Sem, GE Hindi Cinema Aur Uska Adhyyan	62055634
February	Theory & Tutorial	Unit1- Hindi Sahitya Ka Itihas	B.A. Prog 1 st Year IIInd Sem. Hindi B , MIL; Hindi Bhasha Aur Sahitya	62051203
	Theory & Tutorial	Unit 2 -Hindi Cinema Uddbhav Aur Vikas, Unit-3, Cinema Men Camera Ki Bhumika	B.A. Prog 3 rd Year, VIth Sem, GE Hindi Cinema Aur Uska Adhyyan	62055634
March	Theory & Tutorial	Unit 3: Kabir, Tulsidas, Unit 4: Bihari	B.A. Prog 1 st Year IIInd Sem. Hindi B , Hindi Bhasha Aur Sahitya	62051203
	Theory & Tutorial	Unit 4 - Cinema Aur Takneek Film: Mother India	B.A. Prog 3 rd Year, VIth Sem Hindi Cinema Aur Uska Adhyyan	62055634
April	Theory & Tutorial	Ghananad, Subhadra Kumari Chauhan & Nirala	B.A. Prog 1 st Year IIInd Sem. Hindi B , MIL, Hindi Bhasha Aur Sahitya	62051203
	Theory & Tutorial	Unit-4 Film Deewar Mughal-E-Aazam, & PK	B.A. Prog 3 rd Year, VIth Sem , GE Hindi Cinema Aur Uska Adhyyan	62055634
May	Theory & Tutorial	Revision One by One Unit	B.A. Prog 1 st Year IIInd Sem. Hindi B , Hindi Bhasha Aur Sahitya	62051203
		Revision One by One Unit	B.A. Prog 3 rd Year, VIth Sem Hindi Cinema Aur Uska Adhyyan	62055634


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Name of the faculty – Dr. Ashutosh Shukla
Department – Hindi
Year – 2019-20

Month	Theory/Tutorial	Topics	Course	Paper Code/Name	
July	Theory & Tutorial	Bhasik sampresan - swaroop aur sidhant	BA Programme	AECC-Hindi Bhasha or sampresan/72052802	
		Bhasha samaj aur sanskriti	BA Honours- GE	Bhasha aur samaj/12055302	
August	Theory & Tutorial	Sampresan ke prakar	BA Programme	AECC-Hindi Bhasha or sampresan/72052802	
		Bhasai vividhta or bhasik samuday	BA Honours- GE	Bhasha aur samaj/12055302	
September	Theory & Tutorial	Sampresan ke madhyam	BA Programme	AECC-Hindi Bhasha or sampresan/72052802	
		Bhasha aur samajik vayhar	BA Honours- GE	Bhasha aur samaj/12055302	
October	Theory & Tutorial	Vyaktitya or prabhavi bhasik sampresan	BA Programme	AECC-Hindi Bhasha or sampresan/72052802	
		Bhasha sarvekshan	BA Honours- GE	Bhasha aur samaj/12055302	

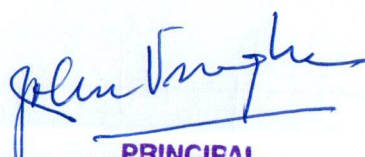
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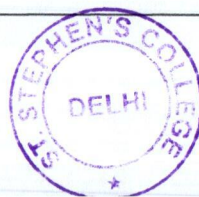




**Name of the faculty member – Dr. Ashutosh Shukla
Department – Hindi
Year – 2019-20**

Month	Theory/Tutorial	Topics	Course	Paper Code/Name
January	Theory & Tutorial	Hindi Bhasha ka parichay, udbhav aur vikas	BA Programme	MIL- Hindi A/ 62051412
		Vaishwaikaran, Hindi Bhasha, Sanskriti aur sahitya, Hindi ka prachar prasar	BA Honours- GE	Hindi ka vaishwik paridshraya/ 12055401
February	Theory & Tutorial	Hindi sahitya ka itihas	BA Programme	MIL- Hindi A/ 62051412
		Hindi Bhasha ka vishwa sandharbh	BA Honours- GE	Hindi ka vaishwik paridshraya/ 12055401
March	Theory & Tutorial	Kabir, Bhusan, Bihari	BA Programme	MIL- Hindi A/ 62051412
		Hindi k prasar me cinema, radio ki bhumika	BA Honours- GE	Hindi ka vaishwik paridshraya/ 12055401
April	Theory & Tutorial	Adhunik Hindi kabita - Prasad, Nagarjun	BA Programme	MIL- Hindi A/ 6205
		Antarastriya hindi sammelan aur ikkisvi sadi me hindi ki chunatia	BA Honours- GE	Hindi ka vaishwik paridshraya/ 12055401


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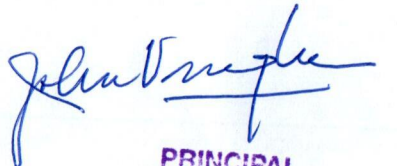


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Urdu Department



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**Name of the Faculty Member: Dr. Shamim Ahmed
Department: Urdu & Persian
Year: 2019-20**

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory and Practical	Sahafat , Ibtida ,Ahad ba ahad irteqa Urdu Sahafat	B A Programme III year	SEC Study of print Media in Urdu 62143510
August	Theory and Practical	Khabar Nigari Idariya Nigari	B A Programme III year	SEC Study of print Media in Urdu 62143510
September	Theory and Practical	Column Nigari Feature	B A Programme III year	SEC Study of print Media in Urdu 62143510
October	Theory and Practical	Interview Tabsara	B A Programme III year	SEC Study of print Media in Urdu 62143510
November	Theory and Practical	Urdu Sahafat Ka Maujooda Manzarnama	B A Programme III year	SEC Study of print Media in Urdu 62143510


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Name of the Faculty Member: Dr. Shamim Ahmed
Department: Urdu & Persian
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	Sair Pehle Darvesh ki by Meer Amman Ghazals By Meer and Zauq	B A Programme II year	Core MIL Urdu B 62141903
February	Theory	Ghalib Ke khutoot 5 Ghazals by Ghalib Masnavi Sahrul bayan by Meer Hasan	B A Programme II year	Core MIL Urdu B 62141903
March	Theory	Sarab e hyat by Sir Syed Ghazal By Momin	B A Programme II year	Core MIL Urdu B 62141903
April	Theory	Phool walon Ki sair By Farhatullah Marsia by Meer Anees	B A Programme II year	Core MIL Urdu B 62141903

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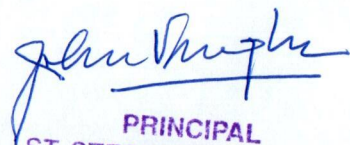


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Chemistry Department


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Name of the Faculty Member: Shabnam Johry
Department: Chemistry
Year: 2019-20

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. Introduction, classification and characteristics of enzymes. Salient features of active site of enzymes.	Chemistry Honours Semester-V 1.Chemistry Honours	CHEMISTRY - C XI: ORGANIC CHEMISTRY IV 1.CHEMISTRY - C XI: ORGANIC CHEMISTRY IV

Shabnam Johry





		<p>Mechanism of enzyme action (taking chymotrypsin as an example), factors affecting enzyme action, coenzymes and cofactors (NAD,FAD), specificity of enzyme action (including stereospecificity)</p> <p>1.Saponification value of the given oil.</p> <p>2.Preparation of Aspirin.</p>	<p>Semester-V</p> <p>2. Chemistry Honours Semester-III</p>	<p>2. SEC: PHARMACEUTICAL CHEMISTRY</p>
October	Theory and Practicals	<p>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.</p> <p>1.Preparation of S-Benzylisothiuronium salt of one each of water soluble and water insoluble acids.</p>	<p>Chemistry Honours Semester-V</p> <p>1. Chemistry Honours Semester-III</p>	<p>CHEMISTRY - C XI: ORGANIC CHEMISTRY IV</p> <p>1.C VI: ORGANIC CHEMISTRY II</p>

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**Name of the Faculty Member: Shabnam Johry
Department: Chemistry
Year: 2019-20**

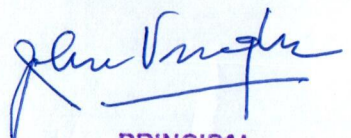
Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory and Practicals	Aromatic Hydrocarbons, Alkyl halides 1. Qualitative analysis of unknown organic compounds containing monofunctional groups 2. Qualitative analysis of unknown organic compounds containing simple functional groups	BSc Program (with Chemistry) Semester-II	Chemical Energetics, Equilibria & 4 Functional Group Organic Chemistry-I
			Chemistry Honours Semester-VI	C XIV: ORGANIC CHEMISTRY V
			Chemistry Honours Semester-IV	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	Chemical Energetics, Equilibria & 4 Functional Group Organic Chemistry-I
			Chemistry Honours Semester-VI	C XIV: ORGANIC CHEMISTRY V
			Chemistry Honours Semester-IV	C IX: ORGANIC CHEMISTRY III
			Chemistry Honours Semester-II	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: 2019-2020

Month	Theory/ Practical	Topics	Course	Paper code/ Name
July - November	Theory	<ul style="list-style-type: none"> Qualitative and quantitative aspects of analysis Sampling, evaluation of analytical data, errors, accuracy and precision, methods of their expression, normal law of distribution of indeterminate errors, statistical test of data; F, Q and t test, rejection of data, and confidence intervals. Separation techniques: Solvent extraction: Classification, principle and efficiency of the technique. Mechanism of extraction: extraction by solvation and chelation. Technique of extraction: batch, continuous and counter current extractions. Qualitative and quantitative aspects of solvent extraction: extraction of metal ions from aqueous solution, extraction of organic species from the aqueous and non-aqueous media. Chromatography: Classification, principle and efficiency of the technique. Mechanism of separation: adsorption, partition & ion exchange. Development of chromatograms: frontal, elution and displacement methods. 	B.Sc. Hons. Chemistry Semester V	DSE Analytical Methods in Chemistry; 32177904
July - November	Theory	Section A <ul style="list-style-type: none"> Transition Elements (3d series) General group trends with special reference to electronic configuration, variable valency, colour, magnetic and catalytic properties, ability to form complexes and stability of various oxidation states (Latimer diagrams) for Mn, Fe and Cu. Lanthanoids and actinoids: Electronic configurations, oxidation states, colour, magnetic properties, lanthanide contraction, separation of lanthanides (ion exchange method only). 	B.Sc. Prog. with Chemistry Semester V	DSE Chemistry of d-block elements, Quantum Chemistry and

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		<ul style="list-style-type: none"> • Coordination Chemistry Valence Bond Theory (VBT): Inner and outer orbital complexes of Cr, Fe, Co, Ni and Cu (coordination numbers 4 and 6). Structural and stereoisomerism in complexes with coordination numbers 4 and 6. Drawbacks of VBT. IUPAC system of nomenclature. • Crystal Field Theory Crystal field effect, octahedral symmetry. Crystal field stabilization energy (CFSE), Crystal field effects for weak and strong fields. Tetrahedral symmetry. Factors affecting the magnitude of D. Spectrochemical series. Comparison of CFSE for O_h and T_d complexes, Tetragonal distortion of octahedral geometry. Jahn-Teller distortion, Square planar coordination. 		Spectroscopy; 42177925
July - November	Practical	<p>(A) Titrimetric Analysis (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality</p> <p>(B) Acid-Base Titrations Principles of acid-base titrations (i) Estimation of sodium carbonate using standardized HCl; (ii) Estimation of carbonate and hydroxide present together in a mixture. (iii) Estimation of carbonate and bicarbonate present together in a mixture. (iv) Estimation of free alkali present in different soaps/detergents</p> <p>(C) Oxidation-Reduction Titrimetry Principles of oxidation-reduction titrations (electrode potentials) to be discussed. (i) Estimation of Fe(II) and oxalic acid using standardized $KMnO_4$ solution (ii) Estimation of oxalic acid and sodium oxalate in a given mixture. (iii) Estimation of Fe(II) with $K_2Cr_2O_7$ using internal indicator NPA and external indicator.</p>	B.Sc. Hons. Chemistry Semester I	LAB: Inorganic Chemistry-I: Atomic Structure & Chemical Bonding; 32171101

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July - November	Practical	<p>I. Separation Techniques Chromatography: (a) Separation of mixtures; (i) Paper chromatographic separation of Co(II) and Ni(II) ions. (ii) Separation and identification of the amino acids present in the given mixture by paper chromatography. Reporting the R_f values.</p> <p>II. Solvent Extractions: (i) To separate a mixture of Ni(II) & Fe(II) ions by complexation with DMG and extracting the Ni(II) - DMG complex in chloroform, and determine its concentration by spectrophotometry.</p> <p>III. Analysis of soil: (i) Determination of pH of soil.; (ii) Total soluble salt; (iii) Estimation of calcium, magnesium; (iv) Qualitative detection of nitrate, phosphate Ion exchange: (i) Determination of exchange capacity of cation exchange resins and anion exchange resins. ; (ii) Separation of amino acids from organic acids by ion exchange chromatography.</p> <p>IV Spectrophotometry Verification of Lambert-Beer's law and determination of concentration of a coloured species.</p>	B.Sc. Hons. Chemistry Semester V	LAB: DSE Analytical Methods in Chemistry; 32177904
July - November	Practical	<ul style="list-style-type: none"> • Gravimetric Analysis Estimation of the amount of nickel present in a given solution as bis(dimethylglyoximate) nickel(II) or Al(III) as oxinate in a given solution gravimetrically. • Complexometric Titrations - Estimation of (i) Mg(II) or (ii) Zn(II) by complexometric titrations. Estimation of total hardness of a given sample of water • Colorimetry - Determination of the composition of the Fe(III) - salicylic acid complex / Fe(II) - phenanthroline complex in solution by Job's method. 	B.Sc. Prog. with Chemistry Semester V	LAB: DSE Chemistry of d-block elements, Quantum Chemistry and Spectroscopy; 42177925

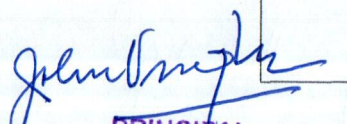
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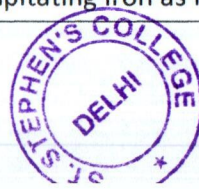




Name of the Faculty Member: Dr. Vibha Sharma
Department: Chemistry Year: 2019-2020

Month	Theory/ Practical	Topics	Course	Paper code/ Name
January - April	Theory	<ul style="list-style-type: none"> Coordination Chemistry Werner's theory, valence bond theory (inner and outer orbital complexes), electroneutrality principle and back bonding. Crystal field theory, measurement of $10 Dq$ (Δ_o), CFSE in weak and strong fields, pairing energies, factors affecting the magnitude of $10 Dq$ (Δ_o, Δ_t). Octahedral vs. tetrahedral coordination, tetragonal distortions from octahedral geometry Jahn-Teller theorem, square planar geometry. Qualitative aspect of Ligand field and MO Theory. IUPAC nomenclature of coordination compounds, isomerism in coordination compounds. Stereochemistry of complexes with 4 and 6 coordination numbers. Chelate effect, polynuclear complexes, Labile and inert complexes. Inorganic Reaction Mechanism Introduction to inorganic reaction mechanisms. Substitution reactions in square planar complexes, Trans- effect, theories of trans effect. Thermodynamic and Kinetic stability. 	B.Sc. Hons. Chemistry Semester V	C-VIII Inorganic Chemistry- III: Coordination Chemistry, 32171401
January - April	Theory	<ul style="list-style-type: none"> Theoretical Principles in Qualitative Analysis (H_2S Scheme) Basic principles involved in analysis of cations and anions. Solubility products, common ion effect. Principles involved in separation of cations into groups and choice of group reagents. Interfering anions (fluoride, borate, oxalate and phosphate) and need to remove them after Group II. 	B.Sc. Prog. with Chemistry Semester V	CHHT-615 Inorganic Chemistry-V, 217601
January - April	Practical	<ul style="list-style-type: none"> Gravimetric Analysis: Estimation of nickel (II) using Dimethylglyoxime (DMG). Estimation of copper as $CuSCN$ Estimation of iron as Fe_2O_3 by precipitating iron as $Fe(OH)_3$. 	B.Sc. Hons. Chemistry Semester I	LAB: C-VIII Lab Inorganic Chemistry-


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		<p>Estimation of Al(III) by precipitating with oxine and weighing as Al(oxine)₃ (aluminium oxinate).</p> <ul style="list-style-type: none"> Inorganic Preparations: Tetraamminecopper (II) sulphate, [Cu(NH₃)₄]SO₄.H₂O Acetylacetonate complexes of Cu(II)/Fe(III) Tetraamminecarbonatocobalt (III) nitrate Potassium tri(oxalato)ferrate(III) Properties of Complexes i. Measurement of 10 Dq by spectrophotometric method ii. Verification of spectrochemical series. iii. Synthesis of ammine complexes of Ni(II) and its ligand exchange reactions (e.g. bidentate ligands like acetylacetone, DMG, glycine) by substitution method. 		III: Coordination Chemistry; 32171401
January - April	Practical	<ul style="list-style-type: none"> Qualitative Analysis Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations. Emphasis should be given to the understanding of the chemistry of different reactions. 	B.Sc. Hons. Chemistry Semester V	LAB: CHHT-615 Inorganic Chemistry-V, 217601
January - April	Practical	<ul style="list-style-type: none"> Section A: Inorganic Chemistry Semi-micro qualitative analysis of mixtures using H₂S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts). 	B.Sc. Prog. with Chemistry Semester IV	LAB: CC IV Chemistry of s- and p-block elements, States of matter & Chemical Kinetics; 42174404

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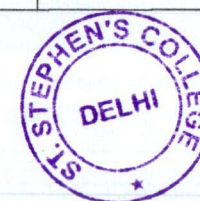




Name of the Faculty Member: Dr. Jaspreet Kaur
Department: Chemistry
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Phase Equilibrium	B.Sc (H) IIyr	PHYSICAL CHEMISTRY III
	Practical	Determination of critical solution temperature		
August	Theory	One-component and two-component systems	B.Sc (H) IIyr	PHYSICAL CHEMISTRY III
	Practical	Construction of the phase diagram using cooling curves		
September	Theory	Solutions	B.Sc (H) IIyr	PHYSICAL CHEMISTRY III
	Practical	Distribution of solute in immiscible solvents		
October	Theory	Surface Chemistry	B.Sc (H) IIyr	PHYSICAL CHEMISTRY III
	Practical	Study of equilibrium		

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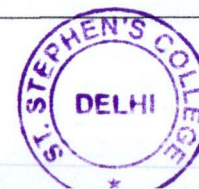




Name of the Faculty Member: Dr. Jaspreet Kaur
Department: Chemistry
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	Introduction and history of polymeric materials, Functionality and its importance	B.Sc (H) IIIyr	Polymer Chemistry
	Practical	Determination of molecular weight by viscometry, the viscosity-average molecular weight		
February	Theory	Kinetics of Polymerization, Polymer Degradation	B.Sc (H) IIIyr	Polymer Chemistry
	Practical	Redox polymerization, Precipitation polymerization		
March	Theory	Determination of molecular weight of polymers	B.Sc (H) IIIyr	Polymer Chemistry
	Practical	Free radical solution polymerization, Emulsion Polymerization		
April	Theory	Polymer Solution	B.Sc (H) IIIyr	Polymer Chemistry
	Practical	Preparation of urea-formaldehyde resin, novalac resin/resold resin.		

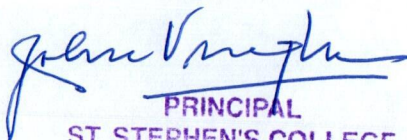
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Name of the Faculty Member: Dr. Jyotirmoy Maity
Department: Chemistry
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Pharmaceutical Chemistry (T,P)	Synthesis and application of medicines	IIC/ II PS	32173909
	Organic Chemistry (P)	Detection of functional groups	II PS	NA
	Green Chemistry (T,P)	Rules and examples of Green Chemistry	IIIC	32177908
	Environmental Studies (T)	Ecosystem, Biodiversity, Natural Resources, Pollution	I PS	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: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Cosmetic Chemistry (T,P)	Preparation of cosmetics	IIC/III PS	32173910
	Organic Chemistry (T,P)	Heterocyclic Chem	IIC	32171402
	Polymer Chemistry (T,P)	Synthesis and application of polymers	IIIC	32177906
	Environmental Studies (T)	Ecosystem, Biodiversity, Natural Resources, Pollution	I Eco	72182801
February	Same as above			
March	Same as above			
April	Same as above			

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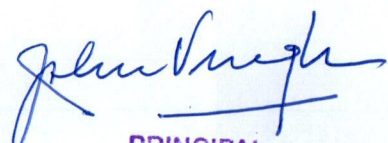
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Physics Department


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Name of the Faculty Member: Sanjay Kumar
Department: Physics. Year: 2019-20

Odd Semester	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July-Nov	Theory	All topics in the University CBCS BSc(H) Physics V Sem Syllabus for Astronomy and Astrophysics were covered. Some Additional Points Many additional topics not mentioned in the syllabus were also discussed in the class. Some of these topics were: (i) Transformation between different astronomical coordinate systems (ii) Binary Star systems and determination of their parameters (iii) Equations for internal structure of stars, (iv) Alfven waves Since it was felt that a single good text did not cover all topics, lecture notes were prepared. PDF copies of a total of 16 lecture notes of over 46,000 words were distributed to students.	BSc(H) Physics V Semester	32227506 Astronomy and Astrophysics DSE
July Nov	Tutorial	Tutorials were conducted as problem solving sessions. A total of eleven problem-based assignments on different topics in the syllabus were given to students.	BSc(H) Physics V Semester	32227506 Astronomy and Astrophysics DSE
July-Nov	Laboratory	CBCS Technical Drawing Syllabus. Topics covered were (i) Projections of points, straight lines, plane figures and three dimensional figures (ii) Sections and (iii) Development of Surfaces.	BSc(H) Physics III Semester	32223906 Technical Drawing SEC Paper
July -Nov	Laboratory	CBCS BSc(P) I Sem Physics Laboratory Syllabus. Besides overseeing students' work in the lab and checking their reports, also gave lectures on Significant Figures and Errors and Uncertainty in experiments. Notes for these were also printed and given to students.	BSc(P) I Semester	Physics Laboratory (Mechanics)

Sanjay Kumar


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Name of the Faculty Member: Sanjay Kumar
Department: Physics. Year: 2019-20

Even Semester	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
Jan-April 2020	Theory	All topics in the University CBCS BSc(H) Physics II Sem Syllabus for Electricity and Magnetism course were covered. Some Additional Points 1. About 30% of the course was covered in the online mode due to COVID shutdown. 2. For the purpose of providing better access to students to the course material, Lecture Notes on about 35% of the course material were prepared and their pdf version were distributed to students. These topics were (i) Magnetostatics (ii) Induction (iii) Magnetism in Matter, (iv) Networks and (v) AC networks. 3. Nine lecture notes of over 26,000 words were prepared. 4. Nine problem-based assignments were given to students. Their solutions were also prepared and distributed.	BSc(H) Physics II Sem	Electricity and Magnetism
Jan-April 2020	Laboratory	CBCS BSc(H) Physics IV Sem Applied Optics Syllabus. Special topics discussed were (i) Making simple optical systems (ii) Fourier Optics (iii) Spatial Filtering (iv) Multiple Lens systems	BSc(H) Physics IV Semester	Applied Optics SEC
Jan –April 2020	Laboratory	CBCS BSc(P) II Sem Physics Laboratory Syllabus. Besides overseeing students' work in the lab and checking their reports, also gave lectures on (i) Trouble shooting in electrical circuits and (ii) Potential divider	BSc(P) II Semester	Physics Laboratory (Electricity and Magnetism)

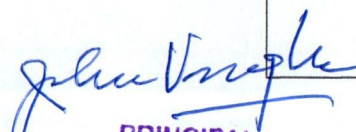

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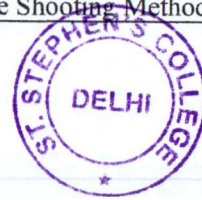




Name of the Faculty Member: Abhinav Gupta
Department: Physics. Year: 2019-20

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 Oscillator. 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	

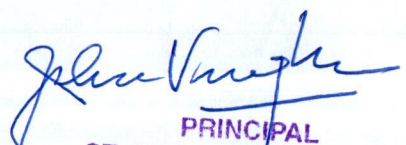

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Name of the Faculty Member: Abhinav Gupta
Department: Physics. Year: 2019-20

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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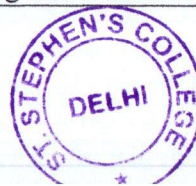




**Name of the Faculty Member: Dr. Annu Malhotra
Department: Physics
Year: 2019-20**

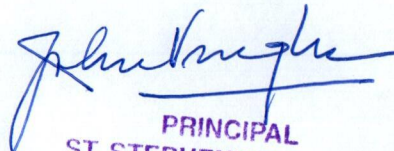
Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory	Zeroth and First Law of Thermodynamics: Extensive and intensive Thermodynamic Variables, Thermodynamic Equilibrium, Zeroth Law of Thermodynamics & Concept of Temperature, Concept of Work & Heat, State Functions, First Law of Thermodynamics and its differential form, Internal Energy, First Law & various processes, Applications of First Law: General Relation between CP and CV, Work Done during Isothermal and Adiabatic Processes, Compressibility and Expansion Co-efficient	B.Sc. (Hons) Physics Semester III	PHYSICS-C VI/ THERMAL PHYSICS
August	Theory	Second Law of Thermodynamics: Reversible and Irreversible process with examples. Conversion of Work into Heat and Heat into Work. Heat Engines. Carnot's Cycle, Carnot engine & efficiency. Refrigerator & coefficient of performance, 2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Carnot's Theorem. Applications of Second Law of Thermodynamics: Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale. Entropy: Concept of Entropy, Clausius Theorem. Clausius Inequality, Second Law of Thermodynamics in terms of Entropy. Entropy of a perfect gas. Principle of Increase of Entropy. Entropy Changes in Reversible and Irreversible processes with examples. Entropy of the Universe. Entropy Changes in Reversible and Irreversible Processes. Principle of Increase of Entropy. Temperature-Entropy diagrams for Carnot's Cycle. Third Law of Thermodynamics. Unattainability of Absolute Zero.	B.Sc. (Hons) Physics Semester III	PHYSICS-C VI/ THERMAL PHYSICS
September	Theory	Thermodynamic Potentials: Thermodynamic Potentials: Internal Energy, Enthalpy, Helmholtz Free Energy, Gibb's Free Energy. Their Definitions, Properties and Applications. Magnetic Work, Cooling due to adiabatic demagnetization, First and	B.Sc. (Hons) Physics	PHYSICS-C VI/

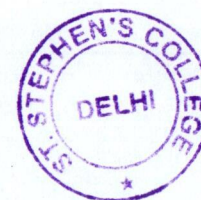
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		second order Phase Transitions with examples, Clausius Clapeyron Equation and Ehrenfest equations, Maxwell's Thermodynamic Relations: Derivation of Maxwell's thermodynamic Relations and their applications, Maxwell's Relations: (1) Clausius Clapeyron equation, (2) Value of $C_p - C_v$, (3) Tds Equations, (4) Energy equations. Kinetic Theory of Gases Distribution of Velocities: Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas and its Experimental Verification	Semester III	THERMAL PHYSICS
October/ November	Theory	Mean, RMS and Most Probable Speeds. Degrees of Freedom. Law of Equipartition of Energy (No proof required). Specific heats of Gases Molecular Collisions: Mean Free Path. Collision Probability. Estimation of Mean Free Path. Transport Phenomenon in Ideal Gases: (1) Viscosity, (2) Thermal Conductivity and (3) Diffusion. Brownian Motion and its Significance. Real Gases: Behavior of Real Gases: Deviations from the Ideal Gas Equation. Andrew's Experiments on CO ₂ Gas. Virial Equation. Critical Constants. Continuity of Liquid and Gaseous State. Vapour and Gas. Boyle Temperature. van der Waal's Equation of State for Real Gases. Values of Critical Constants. Law of Corresponding States. Comparison with Experimental Curves. p-V Diagrams. Free Adiabatic Expansion of a Perfect Gas. Joule-Thomson Porous Plug Experiment. Joule-Thomson Effect for Real and van der Waal Gases. Temperature of Inversion. Joule-Thomson Cooling.	B.Sc. (Hons) Physics Semester III	PHYSICS-C VI/ THERMAL PHYSICS


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Name of the Faculty Member: Dr. Annu Malhotra
Department: Physics
Year: 2019-20

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ 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. Integrals Transforms: 25 Fourier Transforms: Fourier Integral theorem.	B.Sc. (Hons) Physics Semester IV	PHYSICS-VIII/ MATHEMATICAL PHYSICS-III
March	Theory	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.). One dimensional Wave Equations, Dirac delta function, definition and properties.	B.Sc. (Hons) Physics Semester IV	PHYSICS-VIII/ MATHEMATICAL PHYSICS-III
April	Theory	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

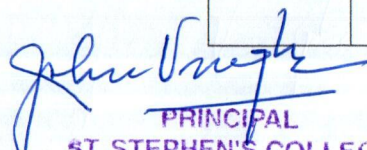
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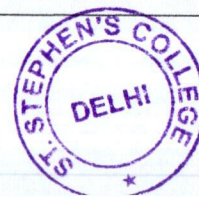




Name of Faculty Member: Dr. Rekha
Department: Physics
Year: 2019-20

Month	Theory/ Practical	Topics	Course	Paper Name
July- August	Theory	Introduction to Thermodynamics Zeroth and First Law of Thermodynamics: Extensive and intensive Thermodynamic Variables, Thermodynamic Equilibrium, Zeroth Law of Thermodynamics & Concept of Temperature, Concept of Work & Heat, State Functions, First Law of Thermodynamics and its differential form, Internal Energy, First Law & various processes, Applications of First Law: General Relation between CP and CV, Work Done during Isothermal and Adiabatic Processes, Compressibility and Expansion Co-efficient. Second Law of Thermodynamics: Reversible and Irreversible process with examples. Conversion of Work into Heat and Heat into Work. Heat Engines. Carnot's Cycle, Carnot engine & efficiency. Refrigerator & coefficient of performance, 2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Carnot's Theorem. Applications of Second Law of Thermodynamics: Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale.	B.Sc. Physics Hons. Sem- III	Physics- CC-VI Thermal Physics
Septemb er	Theory	Entropy: Concept of Entropy, Clausius Theorem. Clausius Inequality, Second Law of Thermodynamics in terms of Entropy. Entropy of a perfect gas. Principle of Increase of Entropy. Entropy Changes in Reversible and Irreversible processes with examples. Entropy of the Universe. Entropy Changes in Reversible and Irreversible Processes. Principle of Increase of Entropy. Temperature-Entropy diagrams for Carnot's Cycle. Third Law of Thermodynamics. Unattainability of Absolute Zero. Thermodynamic Potentials: Thermodynamic Potentials: Internal Energy, Enthalpy, Helmholtz Free Energy, Gibb's Free Energy. Their Definitions, Properties and Applications. Magnetic Work, Cooling due to adiabatic demagnetization, First and second order Phase Transitions with examples, Clausius Clapeyron Equation and Ehrenfest equations.	B.Sc. Physics Hons. Sem- III	Physics- CC-VI Thermal Physics
October	Theory	Maxwell's Thermodynamic Relations: Derivation of Maxwell's thermodynamic Relations and their applications, Maxwell's Relations: (1) Clausius Clapeyron equation, (2) Value of $C_p - C_v$, (3) Tds Equations, (4) Energy equations.	B.Sc. Physics Hons. Sem- III	Physics- CC-VI


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		Kinetic Theory of Gases Distribution of Velocities: Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas and its Experimental Verification. Mean, RMS and Most Probable Speeds. Degrees of Freedom. Law of Equipartition of Energy. Specific heats of Gases.		Thermal Physics
November	Theory	Molecular Collisions: Mean Free Path. Collision Probability. Estimation of Mean Free Path. Transport Phenomenon in Ideal Gases: (1) Viscosity, (2) Thermal Conductivity and (3) Diffusion. Brownian Motion and its Significance. Real Gases: Behavior of Real Gases: Deviations from the Ideal Gas Equation. Andrew's Experiments on CO ₂ Gas. Virial Equation. Critical Constants. Continuity of Liquid and Gaseous State. Vapour and Gas. Boyle Temperature. van der Waal's Equation of State for Real Gases. Values of Critical Constants. Law of Corresponding States. Comparison with Experimental Curves. p-V Diagrams. Free Adiabatic Expansion of a Perfect Gas. Joule-Thomson Porous Plug Experiment. Joule-Thomson Effect for Real and van der Waal Gases. Temperature of Inversion. Joule-Thomson Cooling.	B.Sc. Physics Hons. Sem-III	Physics-CC-VI Thermal Physics
July-August	Theory	Introduction: Fundamentals of Engineering design, design process and sketching: Scales and dimensioning, Designing to Standards (ISO Norm Elements/ISI), Engineering Curves: Parabola, hyperbola, ellipse and spiral.	B.Sc. Physics Hons. And B.Sc. Prog. Sem-III	Physics SEC Technical Drawing
September	Theory	Projections: Principles of projections, Orthographic projections: straight lines, planes and solids.	B.Sc. Physics Hons. And B.Sc. Prog. Sem-III	Physics SEC Technical Drawing
October	Theory	Development of surfaces of right and oblique solids. Section of solids. Intersection and Interpenetration of solids. Isometric and Oblique parallel projections 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 of Inquiry commands to extract drawing data. Control entity properties.	B.Sc. Physics Hons. And B.Sc. Prog. Sem-III	Physics SEC Technical Drawing

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November	Theory	Demonstrating basic skills to produce 2-D drawings. Annotating in Auto CAD with text and hatching, layers, templates and design centre, advanced plotting (layouts, viewports), office standards, dimensioning, internet and collaboration, Blocks, Drafting symbols, attributes, extracting data. Basic printing and editing tools, plot/print drawing to appropriate scale. Computer Aided Design and Prototyping: 3D modeling with AutoCAD (surfaces and solids), 3D modeling with Sketchup, 3D designs, Assembly: Model Editing; Lattice and surface optimization; 2D and 3D packing algorithms, Additive Manufacturing Ready Model Creation (3D printing), Technical drafting and Documentation.	B.Sc. Physics Hons. And B.Sc. Prog. Sem-III	Physics SEC Technical Drawing
July-November	Practical	Practical based on drawing 2D, 3D curves, and orthographic projections using manual drafter and AutoCAD software.	B.Sc. Physics Hons. And B.Sc. Prog. Sem-III	Physics SEC Practical Technical Drawing
July-November	Practical	Section-A: Digital Circuits Hardware design/Verilog Design 1. To design a combinational logic system for a specified Truth Table. (a) To convert Boolean expression into logic circuit & design it using logic gate ICs (b) To minimize a given logic circuit. 2. Half Adder, Full Adder and 4-bit binary Adder. 3. Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C. 4. To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates. 5. To build JK Master-slave flip-flop using Flip-Flop ICs 6. To build a 4-bit Counter using D-type/JK Flip-Flop ICs and study timing diagram. 7. To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip-Flop ICs. 8. To measure (a) Voltage, and (b) Time period of a periodic waveform using CRO and to design an astable multivibrator of given specifications using 555 Timer. 9. To design a monostable multivibrator of given specifications using 555 Timer. Section-B: Programs using 8085 Microprocessor: 1. Addition and subtraction of numbers using direct addressing mode 2. Addition and subtraction of numbers using indirect addressing mode 3. Handling of 16-bit Numbers.	B.Sc. Physics Hons. Sem-III	Physics Practical sCC-VII: Digital Systems and Applications

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**Name of Faculty Member: Dr. Rekha
Department: Physics
Year: 2019-20**

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. Prog. Sem-IV	Physics CC-IVA 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. Prog. Sem-IV	Physics CC-IVA 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. Prog. Sem-IV	Physics CC-IVA 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. Polarization: Transverse nature of light waves. Plane polarized light – production and analysis. Circular and elliptical polarization.	B.Sc. Prog. Sem-IV	Physics CC-IVA Waves and Optics

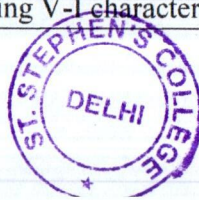
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January-April	Practical	<ol style="list-style-type: none"> 1. Synthesis of metal nanoparticles by chemical route. 2. Synthesis of semiconductor nanoparticles. 3. Surface Plasmon study of metal nanoparticles by UV-Visible spectrophotometer. 4. XRD pattern of nanomaterials and estimation of particle size. 5. To study the effect of size on color of nanomaterials. 6. Fabricate a thin film of nanoparticles by spin coating (or chemical route) and study transmittance spectra in UV-Visible region. 7. Prepare a thin film capacitor and measure capacitance as a function of temperature or frequency. 8. Fabricate a PN diode by diffusing Al over the surface of N-type Si and study its V-I characteristic. 	B.Sc. Physics Hons. Sem-VI	Physics Practical- DSE- Nanomaterials and applications
January-April	Practical	<ol style="list-style-type: none"> 1. Photo-electric effect: photo current versus intensity and wavelength of light; maximum energy of photo-electrons versus frequency of light. 2. To determine the Planck's constant using LEDs of at least 4 different colours. 3. To determine the wavelength of H-alpha emission line of Hydrogen atom. 4. To determine the ionization potential of mercury. 5. To determine the absorption lines in the rotational spectrum of Iodine vapour. 6. To determine the value of e/m by (a) Magnetic focusing or (b) Bar magnet. 7. To show the tunneling effect in tunnel diode using I-V characteristics. 8. To determine the wavelength of laser source using diffraction of single slit. 9. To determine the wavelength of laser source using diffraction of double slits. 	B.Sc. Physics Hons. Sem-IV	Physics Lab- CC-IX Elements of Modern Physics
January-April	Practical	<ol style="list-style-type: none"> 1. To verify the law of Malus for plane polarized light. 2. To determine the specific rotation of sugar solution using Polarimeter. 3. To determine refractive index of liquid using hollow prism. 4. To determine the wavelength and velocity of ultrasonic waves in a liquid (Kerosene Oil, Xylene, etc.) by studying the diffraction through ultrasonic grating. 5. To determine the refractive index of liquid by total internal reflection using Wollaston's air-film. 6. To verify the Stefan's law of radiation and to determine Stefan's constant. 7. To determine Boltzmann constant using V-I characteristics of PN junction diode. 	B.Sc. Physics Hons. Sem-VI	Physics Practical-CC XIII Electromagnetic Theory


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Name of Faculty member: Shruti
Department: Physics
Year: 2019-20

Month	Theory/ Practicals /Tutorials	Topics	Course	Paper Code/Name
July	Theory & Practical	First order Differential equation Euler, modified Euler method	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's method, Bar Pendulum, Kater's Pendulum	B.Sc(P) I	Mechanics: Lab
August	Theory & Practical	RungeKutta (RK) second and Fourth order methods Second order differential equation Fixed difference method	B.Sc(H) Phys	PHYSICS-C V: MATHEMATICAL PHYSICS-II
August	Theory	Work and Energy, Rotational Dynamics,	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's method, Bar Pendulum, Kater's Pendulum	B.Sc(P) I	Mechanics: Lab


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September	Theory & Practical	Solution of Linear system of equations by Gauss elimination method and Gauss Seidal method. Diagonalisation of matrices, Inverse of a matrix,	B.Sc(H) Phys	PHYSICS-C V: MATHEMATICAL PHYSICS-II
September	Theory	Elasticity, Gravitation, Central force Motion	B.Sc(P) I	Mechanics
September	Practical	Sextant, Motion of Spring and calculate (a) Spring constant, (b) Moment of Inertia of a Flywheel, Maxwell's needle, Searle's method, Bar Pendulum, Kater's Pendulum	B.Sc(P) I	Mechanics: Lab
October	Theory & Practical	Partial Differential Equations	B.Sc(H) Phys	PHYSICS-C V: MATHEMATICAL 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's method, Bar Pendulum, Kater's Pendulum	B.Sc(P) I	Mechanics: Lab


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Name of Faculty member: Shruti
Department: Physics
Year: 2019-20

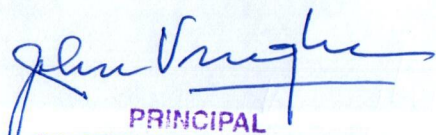
Month	Theory/ Practicals/ Tutorials	Topics	Course	Paper Code/Name
January	Theory	Electric Field and Electric Potential	B.Sc(P) I	Electricity and Magnetism
January	Practical	Carey Foster's Bridge, Anderson's bridge. Verify the Thevenin Theorems, Maximum power transfer theorems, response curve of a Series LCR circuit, charge sensitivity, current sensitivity & CDR of Ballistic Galvanometer	B.Sc(H) I	Electricity and Magnetism :Lab
January	Practical	Solve differential equations:	B.Sc(H)II	PHYSICS-VIII: MATHEMATICAL PHYSICS-III
February	Theory	Dielectric Properties of Matter	B.Sc(P) I	Electricity and Magnetism
February	Practical	Carey Foster's Bridge, Anderson's bridge. Verify the Thevenin Theorems, Maximum power transfer theorems, response curve of a Series LCR circuit, charge sensitivity, current sensitivity & CDR of Ballistic Galvanometer	B.Sc(H) I	Electricity and Magnetism :Lab
February	Practical	Dirac Delta Function:	B.Sc(H)II	PHYSICS-VIII: MATHEMATICAL


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				PHYSICS-III
March	Theory	Magnetic Field, Magnetic Properties of 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 Series LCR circuit, charge sensitivity, current sensitivity & CDR of Ballistic Galvanometer	B.Sc(H) I	Electricity and Magnetism :Lab
March	Practical	Fourier Series, least square fitting	B.Sc(H)II	PHYSICS-VIII: MATHEMATICAL PHYSICS-III
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 Series LCR circuit, charge sensitivity, current sensitivity & CDR of Ballistic Galvanometer	B.Sc(H) I	Electricity and Magnetism :Lab
April	Practical	DFT, FFT	B.Sc(H)II	PHYSICS-VIII: MATHEMATICAL PHYSICS-III


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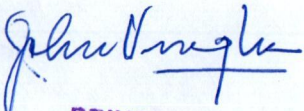


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Mathematics Department


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Name of Faculty Member: Nandita Narain
Department: Mathematics
Year: 2019-20

Month	Course	Paper Code/Name	Theory Covered	Tutorials
July 20 th -31 st	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 socks 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, S_3 , Quaternions, Isometries of R^3 , Translations, Rotations, Groups of Symmetry for line segment, square, triangle, etc D_n 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			HK subgroup iff $HK=KH$, Centraliser of element, subset, subgroup, Normaliser of subset, subgroup, $Z(G)$, Subgroup generated by non-empty set, Cyclic Subgroup $\langle a \rangle$, Every Subgroup of Cyclic Group is cyclic, Order of element, every element of finite group is of finite order, $a^n=e \Rightarrow o(a) \mid n$, order of conjugate, $o(ab)=o(ba)$, $o\langle a \rangle = o(a)$, 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	4. Exercises on Subgroups, Cyclic groups, Lagrange's Theorem from Gallian

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			<p>Theorem, 1-1 corresp between Left and Right Cosets, Index of Subgroup in Group, Groups with Non Trivial Subgroups, Prime Order=> No NTS=> Cyclic. Infinite=> NTS. Finite, non-prime=> cyclic.</p> <p>Normal subgroups, Characterisations of Normality, Subgroups of Index 2 are normal, Examples from S3, D4, Q8, Quotient Group, Indices and Order in Quotient Group,</p>	
October			<p>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, $o(f(a)) \mid o(a)$, Kernel, Homom is 1-1 iff $K=\{e\}$, Isomorphism, Natural homomorphism, First Isomorphism Theorem and Converse, Second Isomorphism Theorem, $G/N \cong G/M/N/M$, $G/N \cong G'/N'$, 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 \mathbb{Z}, Finite cyclic groups to \mathbb{Z}_n. Examples of isomorphic and non-isomorphic groups.</p> <p>Permutations of non-empty set X, $X \sim Y \Rightarrow S_X \sim S_Y$</p>	5. Exercises from Normal Subgroups, Homomorphisms and Isomorphisms from Gallian
November			<p>Cayley's Theorem and its extension to G/H, S_n, Cycles in S_n, 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.</p> <p>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</p>	6. Exercises on Permutation Groups and Direct Products from Gallian

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Name of Faculty Member: Nandita Narain
Department: Mathematics
Year: 2019-20

Month	Course	Paper Code/Name	Theory	Tutorials
January	BSc(H) Mathematics Sem 2	Riemann Integral	Prerequisites Sup & Inf, Continuity etc Definition of Integrability with motivation Examples Constant Fn, Dirichlet's, Step function Example $f(x) = x$ used for motivation for Pn method Motivation for Lower Int \leq Upper Integral Refinement Theorem Lower In $<$ Upper Int and Applications, Pn- Method Riemann's Condition and Applications Pn Cor to RC and Application, Mesh of P Darboux Condn, Darboux Theorem Darboux Lemma, Application of DT	1. Variations of problems done in class. 2. Applications of Pn Method 3. Applications of Riemann's Condition
February			Alg of Int, $f+g$ kf, f^2, fg $f/g, f $ $\text{Max}\{f, g\}$, Additivity, Intro to Order Pres Composite, Search for Counter Ex, Thomaes' Fn Test No 2 (Darboux Condn and Alg of Int) Order Preservation, Lower Int preserves Strict Order not preserved by Lower Int, Variation of Thomaes Fn Strict Order Preserved by Continuous Fn, Defn of $S(P, f)$ $S(P, f)$ Theorem	4. Algebra of Lower and Upper Integrals 5. Order Preservation by Lower and Upper Integrals 6. Composite of two Integrable fns need not be integrable

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			Cauchy Condition of $S(P, f)$ Monotonic, Continuous \Rightarrow Int	
March			Test no 3(Order Preservation, $S(P, f)$) Bdd and Finite discontinuities \Rightarrow int Bounded, $d(S)$ finite \Rightarrow int, bdd, piece-wise mon \Rightarrow int piece-wise cont \Rightarrow int Composite of Continuous and Int fn Composite of Continuous and Int fn (Contd), Defn of F_a . Examples of F_a , Thm F_a is cont f cont $\Rightarrow F_a$ derivable, Cont \Rightarrow primitive, but not conversely primitive does not imply int, nor conversely FTOIC First Form	7.Applications of C-Lemma,
April			FTOIC Second Form, Int by Parts Method of Substitution, First MVT Generalised First MVT, Int of f and $f^{\wedge}-1$ Improper Integrals I, p Integral Absolute Convergence, BCT, LCT of Impr Int Type I, Beta Function, Impr Int of Type 2, p-int, BCT, LCT Mixed impr Int, Gamma Function Conditionally cgt Int, Int $\sin x/x$ Int $\sin x/x$ is not abs cgt Strict Positivity and At least one pt of continuity, Power Series Unif Cgnce, Sum Fn Cont, Der and int Abel's Lemma and Applications	8. Applications of FTOIC from Ross. 9. Problems on Improper Integrals from Ghorpade and Limaye

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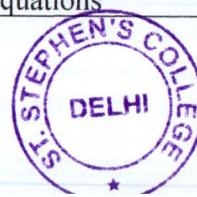




Name of the Faculty Member: Dr. Sonia Davar. Department: Mathematics. Year: 2019-20

Month	Theory/ Practicals	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: Sonali Batra
Department: Mathematics
Year: 2019-20 (ODD SEMESTER)**

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

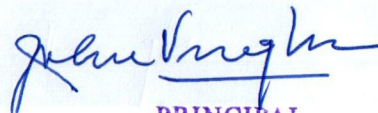
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Name of the Faculty Member: Sonali Batra
Department: Mathematics
Year: 2019-20 (EVEN SEMESTER)

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

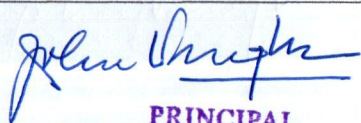

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Name of the Faculty Member: Dr. Radha Mohan
Department: Mathematics
Year: 2019-2020

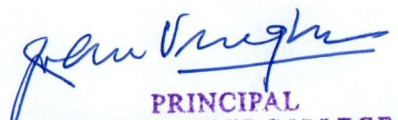
Month	Theory/	Topics	Course	Paper code/ Name
July				
Week 3	Automorphism, Inner Automorphism, Automorphism groups, Automorphism groups of cyclic groups	Automorphism	B.Sc. Mathematics	32351502
Week 4	Characteristic subgroups, Commutator subgroup and properties, Applications of factor subgroups to Automorphism groups	Characteristic subgroups 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 Groups		
Week 4	Index Theorem, Embedding Theorem and Applications, Simplicity of A_5 .	Finite groups		

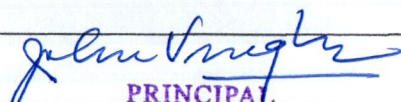

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Name of the Faculty Member: Dr. Radha Mohan
Department: Mathematics
Year: 2019-2020

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 $\mathbb{Z}[x]$.	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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and
Accreditation 2021**



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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		

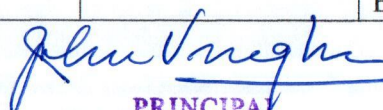
John Varghese
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Name of the Faculty Member: Krishma Babbar
Department: Mathematics
Year: 2019-2020

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
July	Theory & Tutorials	The first derivative test, Concavity and inflection points, Second derivative test	B.Sc (H) Physics	32355101/ GE 1 Calculus
August	Theory & Tutorials	Curve sketching using first and second derivative test. Limits at infinity, Horizontal asymptotes, Vertical asymptotes, Graphs with asymptotes; L'Hôpital's rule. Volumes by slicing, Volumes of solids of revolution by the disk method	B.Sc (H) Physics	32355101/ GE 1 Calculus
September	Theory & Tutorials	Volumes of solids of revolution by the washer method, Volume by cylindrical shells. Length of plane curves, Arc length of parametric curves, Area of surface of revolution. Techniques of sketching conics, Reflection properties of conics. Polar coordinates, Graphing in polar coordinates.	B.Sc (H) Physics	32355101/ GE 1 Calculus
October	Theory & Tutorials	Vector-valued functions: Limit, continuity, Derivatives, Integrals, Arc length, Unit tangent vector, Curvature, Unit normal vector. Functions of several variables: Graphs, Level curves, Limits and continuity, Partial derivatives and differentiability.	B.Sc (H) Physics	32355101/ GE 1 Calculus
November	Theory & Tutorials	Functions of several variables: The chain rule, Directional derivatives and gradient vectors. Functions of several variables: Tangent plane and normal line, Extreme values and saddle points.	B.Sc (H) Physics	32355101/ GE 1 Calculus



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Name of the Faculty Member: Krishma Babbar
Department: Mathematics
Year: 2019-2020

Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory & Practicals	Differential equations and mathematical models, Order and degree of a differential equation, Exact differential equations and integrating factors of first order differential equations, Reducible second order differential equations.	B.Sc (H) Mathematics	32351202 / Differential Equations
February	Theory & Practicals	Application of first order differential equations to acceleration-velocity model, Growth and decay model.	B.Sc (H) Mathematics	32351202 / Differential Equations
March	Theory & Practicals	General solution of homogeneous equation of second order, Principle of superposition for a homogeneous equation; Wronskian, its properties and applications; Linear homogeneous and non-homogeneous equations of higher order with constant coefficients; Euler's equation.	B.Sc (H) Mathematics	32351202 / Differential Equations
April	Theory & Practicals	Method of undetermined coefficients, Method of variation of parameters; Applications of second order differential equations to mechanical vibrations.	B.Sc (H) Mathematics	32351202 / Differential Equations


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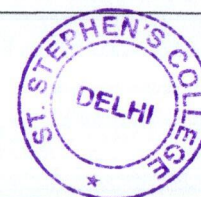




Name of the Faculty Member: Kashif Ahmed. Department: Mathematics, Year: 2019-20

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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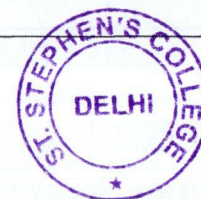




Name of the Faculty Member: Kashif Ahmed. Department: Mathematics, Year: 2019-20

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

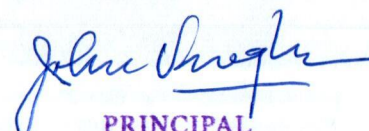
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Name of the Faculty Member: Dr. Jaspreet Kaur
Department: Mathematics. Year: 2019-20

Month	Theory/ Practical	Topics	Course	Paper Name
July	Group Theory II (Theory 5+Tutorial 6) GE-Calculus Theory 5	Automorphism, Inner automorphism, automorphism groups of finite and infinite cyclic groups, characteristic subgroups, commutator subgroup, applications of factor groups to automorphism groups. Question based on these topics from the recommended book discussed in tutorial classes. Epsilon-delta def of limit of a function, one sided limit, limits at infinity, asymptotes, differential of a function	B.Sc(H) Mathematics IIIrd year B.Sc(H) Physics Ist year	Group Theory II GE-Calculus
August	Same as above	External direct product, Internal direct product, classification of groups of order p^2 , Fundamental theorem of finite abelian group. The isomorphism classes of abelian groups. Question based on these topics from the recommended book discussed in tutorial classes. 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	Group actions and permutation representations, stabilizers and kernels of group actions. Groups acting on themselves by left multiplication. Conjugacy classes, class equations, p-groups. Question based on these topics from the recommended book discussed in tutorial classes. 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
October	Same as above	Sylows theorem and applications, Finite simple groups, non-simplicity test, Cayley's theorem, Index theorem, Embedding theorem and applications. Question based on these topics from the recommended book discussed in tutorial classes. Curvature, Unit normal vector, Torsion, functions of several variables, Directional derivatives, gradients, tangent planes, extreme values, saddle points.	Same as above	Same as above


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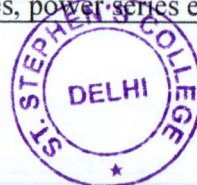




Name of the Faculty Member: Dr. Jaspreet Kaur
Department: Mathematics. Year: 2019-20

Month	Theory/ Practical	Topics	Course	Paper Name
January	Complex Analysis Theory (4) Complex Analysis Practical (8) GE- Elements of Analysis Theory (3) GE-Elements of Analysis Tutorial (2)	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. Finite and infinite sets, countable and uncountable set results, axioms/ field properties of real nos. Question based on these topics from recommended book discussed in tutorial classes.	B.Sc(H) Mathematics III rd Year B.Sc(H) Eco, Phy, Chem IIInd year	Complex Analysis GE- Elements of Analysis
February	Same as above	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. Absolute value of reals, order property of reals. Concept of Supremum and infimum, Archimedean property of reals.	Same as above	Same as above
March	Same as above	Contour integration, ML-inequality theorem and applications, antiderivatives, Cauchy – Goursat theorem, Liouville's 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. Infinite series of reals introduction, geometric series, p-series convergence. Positive term series comparison test, limit comparison test, ratio test.	Same as above	Same as above
April and May	Same as above	Complex sequences and series, complex power series, Taylor's theorem, Laurent theorem, Singular points, Types of singular points, Poles and residues. Practicals based on the above topics. Integral tests Root test, Alternating series, Leibnitz test, Absolute and conditional convergence, Power series, Cauchy-Hadamard theorem, term by term Differentiation and integration of power series, power series expansion of some elementary functions.	Same as above	Same as above

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Name of the Faculty Member: Archana Chopra
Department: Mathematics. Year: 2019-20


Year: 2019-20 (Odd Sem)				
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 for non-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-one correspondence 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 of one-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 continuous functions.	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
September	Theory	The Euclidean algorithm. Well ordering principle, The division algorithm in \mathbb{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 interval theorem. 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

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	Tutorial	Doubts discussion and Exercise Questions	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351302
October	Theory	Divisibility, Modular arithmetic and basic properties of congruences. Test	B.Sc(H) Mathematics 1st Sem	Algebra 32351102
		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 exercise questions	B.Sc(H) Mathematics 3rd Sem	Theory of Real Functions 32351302
November	Theory	Statements of the fundamental theorem of arithmetic and principle 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 $\sin x$ and $\cos x$. 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

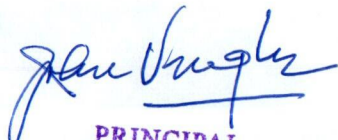

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**Name of the Faculty Member: Archana Chopra
Department: Mathematics. Year: 2019-20**

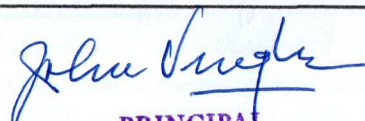
Year: 2019-20 (Even Sem)				
Month	Theory/ Practical/ Tutorials	Topics	Course	Paper code/ Name
January	Theory	Definitions and examples of pointwise and uniformly convergent sequence of functions. Motivation for uniform convergence by giving examples. Theorem on the continuity of the limit function of a sequence of functions.	<u>B.Sc</u> (H) Mathematics 4th Sem	Reimann Integration and 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 continuous functions including Intermediate value theorem.	<u>B.Sc</u> (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 \mathbb{R} , Archimedean property of \mathbb{R} . Real sequences, Convergence, Sum and product of convergent sequences, Order preservation and squeeze theorem.	<u>B.Sc</u> (H) Phy+chem +Eco(H)	GE-Elements of I Analysis 32355444
	Tutorial	Practice questions based on exercise.	<u>B.Sc</u> (H) Mathematics 4th Sem	Reimann Integration and Series of Functions 32351402
		Practice questions based on exercise.	<u>B.Sc</u> (H) Phy+chem +Eco(H)	GE-Elements of I Analysis 32355444

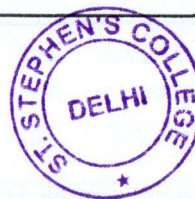

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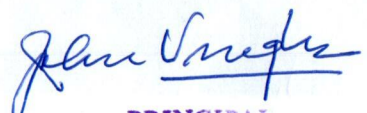
February	Theory	The statement of the theorem on the interchange of the limit function and derivative, and its illustration with the help of examples. The interchange of the limit function and integrability of a sequence of functions. Pointwise and uniform convergence of series of functions, Test	<u>B.Sc</u> (H) Mathematics 4th Sem	Reimann Integration and Series of Functions 32351402
		Differentiability, Successive differentiation, Leibnitz theorem, Recursion formulae for higher derivatives.	<u>B.Sc</u> (Prog) 2nd Sem	Calculus and Geometry 42351201
		Monotone sequences and their convergence, Proof of convergence of some simple sequences. Subsequences and the Bolzano-Weierstrass theorem (statement and examples), Limit superior and limit inferior of a bounded sequence (definition and examples), Statement and illustrations of Cauchy convergence criterion for sequences.	<u>B.Sc</u> (H) Phy+chem +Eco(H)	GE-Elements of I Analysis 32355444
	Tutorial	Presentations based on exercise questions and doubt session.	<u>B.Sc</u> (H) Mathematics 4th Sem	Reimann Integration and Series of Functions 32351402
		Presentations based on exercise questions and doubt session.	<u>B.Sc</u> (H) Phy+chem +Eco(H)	GE-Elements of I Analysis 32355444
March	Theory	Theorems on the continuity, derivability and integrability of the sum function of a series of functions. 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.	<u>B.Sc</u> (H) Mathematics 4th Sem	Reimann Integration and Series of Functions 32351402
		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's expansion of functions such as $\sin x$, $\cos x$, $\log(1+x)$, e^x , $(1+x)^m$.	<u>B.Sc</u> (Prog) 2nd Sem	Calculus and Geometry 42351201


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		Definition and a necessary condition for convergence of an infinite series, Geometric series, Cauchy convergence criterion for series, 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 test; Absolute and conditional convergence. Test-1	B.Sc(H) Phy+chem +Eco(H)	GE-Elements of I Analysis 32355444
	Tutorial	Practice session and doubts discussion.	B.Sc(H) Mathematics 4th Sem	Reimann Integration and Series of Functions 32351402
		Practice session and doubts discussion.	B.Sc(H) Phy+chem +Eco(H)	GE-Elements of I Analysis 32355444
	Theory	Theorems on the continuity, derivability and integrability of the sum 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 Integration and Series of Functions 32351402
		polynomial approximation and error estimation. Functions of two or more variables, Graphs and Level curves of functions of two variables, Partial differentiation up to second order. Test	B.Sc(Prog) 2nd Sem	Calculus and Geometry 42351201
April		Definition of power series, Radius and interval of convergence, Cauchy-Hadamard theorem. Statement and illustration of term-by-term differentiation, Integration of power series and Abel's theorem. Power series expansions and their properties.	B.Sc(H) Phy+chem +Eco(H)	GE-Elements of I Analysis 32355444
	Tutorial	Presentations based on exercise questions and doubt session.	B.Sc(H) Mathematics 4th Sem	Reimann Integration and Series of Functions 32351402
		Presentations based on exercise questions and doubt session.	B.Sc(H) Phy+chem +Eco(H)	GE-Elements of I Analysis 32355444


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Name of the Faculty member: Ms. Rajni Gupta		
Department: Mathematics		

Year: 2019-20 (Odd Sem)		
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Month	Theory/ Practical	Topics	Course	Paper code/ Name
July	Theory	Techniques of sketching conics: Parabola, Ellipse and Hyperbola.	B.Sc(H) Mathematics 1st Sem	Calculus 32351101
		Introduction to TeX and LaTeX, Creating and typesetting a simple LaTeX document.	B.Sc(Prog) 3rd Sem	SEC-1 MATHEMATICAL TYPESETTING SYSTEM: LATEX
		Introducing R, using R as a calculator; Explore data and relationships in R	B.Sc(Prog) 5th Sem	SEC-3 Statistical Software: R 42353503
	Practical	Introduction to Maxima and basics	B.Sc(H) Mathematics 1st Sem	Calculus 32351101
		Introduction with texmaker and sharelatex. Practice of topics covered in theory classes.	B.Sc(Prog) 3rd Sem	SEC-1 MATHEMATICAL TYPESETTING SYSTEM: LATEX 42353327
		Introduction to R software and Rstudio. Practice on R based on topics done in theory.	B.Sc(Prog) 5th Sem	SEC-3 Statistical Software: R 42353503

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August	Theory	Reflection properties of conics, Rotation of axes, Second degree equations introduction and their classification into conics using the discriminant.	B.Sc(H) Mathematics 1st Sem	Calculus 32351101
		Adding basic information to documents, Environments, Footnotes, Sectioning, Displayed material. Accents and symbols; Mathematical typesetting (elementary and advanced): Subscript/Superscript, Fractions, Roots, Ellipsis, Mathematical symbols, Arrays, Delimiters	B.Sc(Prog) 3rd Sem	SEC-1 MATHEMATICAL TYPESETTING SYSTEM: LATEX 42353327
		Reading and getting data into R: Combine and scan commands, viewing named objects and removing objects from R, Types and structures of data items with their properties, Working with history commands, Saving work in R.	B.Sc(Prog) 5th Sem	SEC-3 Statistical Software: R 42353503
	Practical	Practical 1, 4 and 6	B.Sc(H) Mathematics 1st Sem	Calculus 32351101
		Practice over sharelatex. Doubt discussions. Practice questions as daily class evaluation	B.Sc(Prog) 3rd Sem	SEC-1 MATHEMATICAL TYPESETTING SYSTEM: LATEX 42353327
		Practice based on the topics covered in theory classes. Exercise questions discussion.	B.Sc(Prog) 5th Sem	SEC-3 Statistical Software: R 42353503
		Second degree equations and their classification into conics using the discriminant. Introduction to vector functions and their graphs	B.Sc(H) Mathematics 1st Sem	Calculus 32351101

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September	Theory	Multiline formulas, Putting one thing above another, Spacing and changing style in math mode. Pictures and Graphics in LaTeX, Test-1	B.Sc(Prog) 3rd Sem	SEC-1 MATHEMATICAL TYPESETTING SYSTEM: LATEX 42353327
		Manipulating vectors, Data frames, Matrices and lists; Viewing objects within objects, Constructing data objects and their conversion. Summary statistics for vectors. Test-1	B.Sc(Prog) 5th Sem	SEC-3 Statistical Software: R 42353503
	Practical	Practical 3, 8 and 9	B.Sc(H) Mathematics 1st Sem	Calculus 32351101
		Practice and exercise questions. Practical Test-1	B.Sc(Prog) 3rd Sem	SEC-1 MATHEMATICAL TYPESETTING SYSTEM: LATEX 42353327
		Practice based on the topics covered in theory classes. Practical Test -1 . Discussion based on sample questions.	B.Sc(Prog) 5th Sem	SEC-3 Statistical Software: R 42353503
	Theory	Operations with vector functions, Limits and continuity of vector functions, Differentiation and tangent vectors. Properties of vector derivatives and integration of vector functions; Modeling ballistics and planetary motion.	B.Sc(H) Mathematics 1st Sem	Calculus 32351101
		Simple pictures using PS Tricks, Plotting of functions. Beamer Introduction	B.Sc(Prog) 3rd Sem	SEC-1 MATHEMATICAL TYPESETTING SYSTEM: LATEX 42353327

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October		Data frames, Matrices and lists; Summary tables. Stem and leaf plot, Histograms, Density function and its plotting, The Shapiro-Wilk test for normality, The Kolmogorov-Smirnov test.	B.Sc(Prog) 5th Sem	SEC-3 Statistical Software: R 42353503
	Practical	Practical 2 and 7. Practical Test	B.Sc(H) Mathematics 1st Sem	Calculus 32351101
		Practice with Pstricks and nodes. Short Class tasks in latex.	B.Sc(Prog) 3rd Sem	SEC-1 MATHEMATICAL TYPESETTING SYSTEM: LATEX 42353327
		Practice based on the topics covered in theory classes. Exercise questions discussion.	B.Sc(Prog) 5th Sem	SEC-3 Statistical Software: R 42353503


November	Theory	Kepler's second law. Unit tangent, Normal and binormal vectors, Curvature. Theory Test	B.Sc(H) Mathematics 1st Sem	Calculus 32351101
		Frames, Setting up beamer document, Enhancing beamer presentation. Theory Test-2	B.Sc(Prog) 3rd Sem	SEC-1 MATHEMATICAL TYPESETTING SYSTEM: LATEX 42353327
		Plotting in R: Box-whisker plots, Scatter plots, Pairsplots, Line charts, Pie charts, Cleveland dot charts, Bar charts; Copy and save graphics to other applications. Test-2	B.Sc(Prog) 5th Sem	SEC-3 Statistical Software: R 42353503
		Practical 5 and 10. Practical Re-Test of all practicals	B.Sc(H) Mathematics 1st Sem	Calculus 32351101

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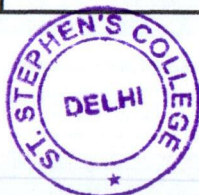
	Practical	Beamer Presentations. Doubts discussion. PracticalTest-2	B.Sc (Prog) 3rd Sem	SEC-1 MATHEMATICAL TYPESETTING SYSTEM: LATEX 42353327
		Practice based on the topics covered in theory classes. Practical Test -2. Working in R based on bigger data excel sheets from govt. websites.	B.Sc (Prog) 5th Sem	Statistical Software: R 42353503


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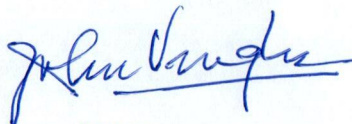
Year : 2019-20 (Even Sem)				
Month	Theory/ Practical	Topics	Course	Paper code/ Name
January	Theory	R as a calculator, Explore data and relationships in R. Reading and getting data into R: Combine and scan commands, Types and structure of data items with their properties. Manipulating vectors, Data frames, Matrices and Lists. Viewing objects within objects. Constructing data objects and conversions.	B.Sc(H) Mathematics 4th Sem	SEC-2 CAS and Related Software 32353401
		Transportation problem and its mathematical formulation, northwest-corner method, least cost method and Vogel approximation method for determination of starting basic feasible solution. Algorithm for solving transportation problem.	B.Sc(Prog) 6th Sem	SEC- Transportation and Network Flow Problems 42353604
		Techniques of sketching conics: Parabola, Ellipse and Hyperbola. Reflection properties of conics.	B.Sc(Prog) 2nd Sem	Calculus and Geometry 42351201
	Practical	Introduction to R software and Rstudio. Practice on R based on topics done in theory.	B.Sc(H) Mathematics 4th Sem	SEC-2 CAS and Related Software 32353401
		Transportation questions on Excel solver.	B.Sc(Prog) 6th Sem	SEC- Transportation and Network Flow Problems 42353604
February	Theory	Summary commands: Summary statistics for vectors, Data frames, Matrices and lists. Summary tables. Stem and leaf plot, histograms. Plotting in R: Box-whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts, Cleveland dot charts and Bar charts. Copy and save graphics to other applications. Theory Test-1	B.Sc(H) Mathematics 4th Sem	SEC-2 CAS and Related Software 32353401
		Assignment problem and its mathematical formulation, Hungarian method for solving assignment problem, traveling salesperson problem.	B.Sc(Prog) 6th Sem	SEC- Transportation and Network Flow Problems 42353604



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March	Practical	Rotation of axes, second degree equations and their classification into conics using the discriminant. Introduction to Vector-valued functions.	B.Sc(Prog) 2nd Sem	Calculus and Geometry 42351201
		Practice based on the topics covered in theory classes. Practical Test -1	B.Sc(H) Mathematics 4th Sem	SEC-2 CAS and Related Software 32353401
		Assignment question and exercise questions on solver.	B.Sc(Prog) 6th Sem	SEC- Transportation and Network Flow Problems 42353604
	Theory	Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, Producing tables of values, Working with piecewise defined functions, Combining graphics. Simple programming in a CAS. Plotting functions of two variables using Plot3D and Contour plot. Quiz	B.Sc(H) Mathematics 4th Sem	SEC-2 CAS and Related Software 32353401
		Network models, minimum spanning tree algorithm, shortest-route problem, maximum flow model. Test-1	B.Sc(Prog) 6th Sem	SEC- Transportation and Network Flow Problems 42353604
		Differentiation of vector-valued functions, Gradients, Divergence, Curl and their geometrical interpretation.	B.Sc(Prog) 2nd Sem	Calculus and Geometry 42351201
	Practical	Practice in Mathematica based on the topics covered in theory classes. Discussion based on Exercise Questions.	B.Sc(H) Mathematics 4th Sem	SEC-2 CAS and Related Software 32353401
		Practice based on network problems on solver.	B.Sc(Prog) 6th Sem	SEC- Transportation and Network Flow Problems 42353604


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April	Theory	Plotting parametric curves surfaces, Customizing plots, Animating plots. Working with matrices, Performing Gauss elimination, Operations (Transpose, Determinant, Inverse), Minors and cofactors, Working with large matrices, Solving system of linear equations, Rank and nullity of a matrix, Eigenvalue, Eigenvector and diagonalization. Theory Test-2 based on Mathematica. Quiz	B.Sc(H) Mathematics 4th Sem	SEC-2 CAS and Related Software32353401
		Project network, CPM and PERT. Test-2	B.Sc(Prog) 6th Sem	SEC- Transportation and Network Flow Problems 42353604
		Spheres, Cylindrical surfaces. Illustrations of graphing standard quadric surfaces like cone, ellipsoid. Test	B.Sc(Prog) 2nd Sem	Calculus and Geometry 42351201
	Practical	Practice in Mathematica based on the topics covered in theory classes. Exercise Questions. Practical Test-2 based on Mathematica.	B.Sc(H) Mathematics 4th Sem	SEC-2 CAS and Related Software32353401
		Project related questions on solver. Practical Test	B.Sc(Prog) 6th Sem	SEC- Transportation and Network Flow Problems 42353604

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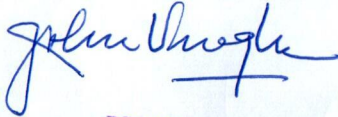


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Computer Science Department


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Name of the Faculty Member: Ms. Hunny Gaur
Department: Computer Science
Year: 2019-20

Month	Theory/ Practical	Topics	Course	Paper code/ Name
July	Theory + Practicals	<ul style="list-style-type: none"> Basics of Computer Organization CPU, Memory, I/O units Notion of algorithm Introduction to Python programming Working with interpreter/shell 	Generic Elective for BA/BSc Hons, I Year	Programming using Python (32345104)
August	Theory + Practicals	<ul style="list-style-type: none"> Understanding keywords, identifiers and literals Understanding and working with operators and expressions Creating python programs using decision statements and loops 	Generic Elective for BA/BSc Hons, I Year	Programming using Python (32345104)
September	Theory + Practicals	<ul style="list-style-type: none"> Introduction to errors and exceptions Working with string class Built-in function in string class Working with List, Tuple, Set and Dictionary 	Generic Elective for BA/BSc Hons, I Year	Programming using Python (32345104)
October	Theory + Practicals	<ul style="list-style-type: none"> Introduction to classes and objects Working with standard libraries File handling through libraries 	Generic Elective for BA/BSc Hons, I Year	Programming using Python (32345104)
November	Theory + Practicals	<ul style="list-style-type: none"> Built-in data structures Stacks and Queues Searching and Sorting 	Generic Elective for BA/BSc Hons, I Year	Programming using Python (32345104)

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**Name of the Faculty Member: Ms. Hunny Gaur
Department: Computer Science
Year: 2019-20**

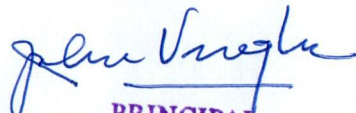
Month	Theory/ Practical	Topics	Course	Paper code/ Name
January	Theory + Practicals	<ul style="list-style-type: none"> • Introduction: computer network as a threat • Understanding vulnerabilities: Hardware and software • Coding ceaser and rail-fence cipher • Introduction to symmetric and asymmetric key cryptography 	Generic Elective for BA/BSc Hons, II Year	Information Security & Cyber Laws (32345401)
February	Theory + Practicals	<ul style="list-style-type: none"> • Risk analysis and threat • Analysis process, data protection • Understanding terms: access control, security assurance • What is incident response plan 	Generic Elective for BA/BSc Hons, II Year	Information Security & Cyber Laws (32345401)
March	Theory + Practicals	<ul style="list-style-type: none"> • Information gathering techniques: Tools for scanning, spoofing and password cracking • Working with Nmap • Understanding session hijacking and MITM attack • Safety tools: firewall, IDPS 	Generic Elective for BA/BSc Hons, II Year	Information Security & Cyber Laws (32345401)
April	Theory + Practicals	<ul style="list-style-type: none"> • What is digital crime • Cyber forensics • Difference between Digital and electronic signatures • Cyber laws as per IT rule 2008 	Generic Elective for BA/BSc Hons, II Year	Information Security & Cyber Laws (32345401)

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Physical Education Department


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Name of the Faculty Member: SUJAY JOHN K
Year: 2019-20

Department: PHYSICAL EDUCATION

Month		Topics	Course	Paper Name	Paper Code
July	Theory	Meaning, Definition and Concept of Yoga Historical Development of Yoga Foundation of Ashtang Yoga	GE	Yoga and Stress Management	12555101
	Practical	Suryanamaskar: Introduction, Asanas in the routine, Steps involved.			
	Tutorial				
	Theory	Health Education: Meaning, Concept and Principles Health – Importance, Components, Health Promoting Behaviours	GE	Health Education Anatomy and Physiology GE II	12555321
	Practical	Asanas and Therapeutic Value : Karnapeedasana, Padmasana, Dhanurasana			
	Tutorial				
	Theory	SPORTS FOR FUN: Fun, Games Festival; Organizing Games Festival; Games Festival Facility; Sports Clubs. SPORTS FOR COMPETITIONS: Competition; Sports Selections; Sports participation and sports competitions.	GE	Sports for All GE III	62555501
	Practical	Practical 4, 5 and 6			

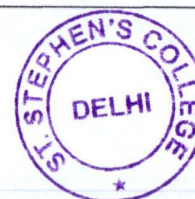
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	Tutorial				
	Theory	WHOLISTIC PERSONALITY DEVELOPMENT - 1 Introduction to Personality & holistic Personality, Meaning and Definition of Personality & holistic Personality. Introduction to the acronym CAKE	SEC	Holistic Personality Development SEC	62553339
	Practical	Measuring self responsibility of 24 hours recall method.			
	Tutorial				
	Theory	Physical Activity and Wellness of Participation in Physical Activities with Specific Reference to Health Concept, Components, Significance of Positive Lifestyle and Quality of Life.	SEC	Wellness and Fitness SEC	62553503
	Practical	Introduction : Walking, Jogging, Running, Calisthenics, Rope Skipping, Cycling, Swimming, Circuit Training, Weight training, Adventure Sports			
	Tutorial				
August	Theory	Meaning, Procedure, Precautions and Benefits of the following Asanas: Meditative Asanas; Supine Position Asanas; Prone Position Asanas ; Sitting Asanas; Standing Asanas	GE	Yoga and Stress Management	12555101
	Practical	Pranayams (any two) and Shat-karmas / Kriyas			
	Tutorial				

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Theory	SPORTS FOR FUN: Fun, Games Festival; Organizing Games Festival; Games Festival Facility; Sports Clubs. SPORTS FOR COMPETITIONS: Competition; Sports Selections; Sports participation and sports competitions.	GE	Sports for All GE III	62555501
Practical	Practical 4, 5 and 6			
Tutorial				
Theory	Role of Personal Hygiene, Mental Hygiene, Sleep Hygiene, Occupational Hygiene in PE & sports Role of Different Agencies in Promoting Health (WHO, UNICEF, Local Bodies)	GE	Health Education Anatomy and Physiology GE II	12555321
Practical	Asanas and Therapeutic Value : Sarvangasana, Paschimottanasana, Chakrasana,			
Tutorial				
Theory	Components of holistic Personality in relation to existing knowledge on personality and character building. PEST MOVES. Holistic personality as represented by the car and its four wheels.	SEC	Holistic Personality Development SEC	62553339
Practical	Measurement of holistic personality			
Tutorial				

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	Theory	Fitness: Concept, Components (Health Related, Skill Related, Cosmetic),	SEC	Wellness and Fitness SEC	62553503
	Practical	Significance; Aerobic and Anaerobic Exercise, Target Heart Rate, Warming Up, Conditioning, Cooling Down,			
	Tutorial				
September	Theory	Pranayamas : Procedure, Precautions and Benefits of the following Anulom-Vilom, Suryabhedan, Ujjayi, Bhrameri, Sheetal, SheetkariPranayamas Shatkarmas: Meaning, Procedure, Precautions and Benefits of the following Kapalbhati, Trataka, Neti and VamanDhauti.	GE	Yoga and Stress Management	12555101
	Practical	Introduction to Pranayama			
	Tutorial				
	Theory	SPORTS FOR HEALTH: Health; Diagnosis of ill-health, Prevention and Treatment of ill health and Sports. SPORTS FOR PHYSIOTHERAPY : Physiotherapy & Handicap. Exercise and Sports for physiotherapy. Testing of progress in physiotherapy treatment.	GE	Sports for All GE III	62555501
	Practical	Practical 7, 8, 9			
	Tutorial				

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Theory	Need and Importance of Anatomy & Physiology in PE Definition and Description of Cell, Tissue, Organ and System Brief Introduction to Skeletal System, Muscular System, Circulatory System, Respiratory System	GE	Health Education Anatomy and Physiology GE II	12555321
Practical	Asanas and Therapeutic Value : Matsyasana, Ardhamatsyendrasana, Usthrasana			
Tutorial				
Theory	PHYSICAL PERSONALITY DEVELOPMENT	SEC	Holistic Personality Development SEC	62553339
Practical	1. Personality development prescription to type A, type B and type C mental personality people. 2. Application of MEN Acronyms.			
Tutorial				
Theory	General Principles of Training: Introduction, Significance and Benefits of each Principle	SEC	Wellness and Fitness SEC	62553503
Practical	General Principles of Training: Practical Training and Concept of Training			
Tutorial				

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October	Theory	Stress Management: Concept, Causes and Effects of Stress Non-communicable diseases (due to stress), Stress prevention and good health Stress Management through relaxation techniques Autogenic training and progressive muscle relaxation, deep breathing, meditation Sports, recreational, adventure sports, physical activities as coping strategies	GE	Yoga and Stress Management	12555101
	Practical	Understanding Stress and Identifying the Stressors			
	Tutorial				
	Theory	Effects of Exercise on different systems of the body Concepts Warming-up, Conditioning, Cooling-down Fatigue, Stitch, Cramp, Oxygen Debt, Second Wind Maximum Heart Rate, Vital Capacity, Stroke Volume, Temperature Regulation, Lactate Threshold and VO2 max.	GE	Health Education Anatomy and Physiology GE II	12555321
	Practical	Asanas and Therapeutic Value : Mayurasana, Shirshasana, Vajrasana Demonstrate Warming-up / Conditioning / Cooling-down exercises.			
	Tutorial				
	Theory	SPORTS FOR CHALLENGED POPULATIONS : Visually, Auditory, Physical and Modified Sports. SPORTS FOR FIGURE & PERSONALITY: Meaning, concept and definition of Figure; disfigure effects; weight control, exercise and Sports.	GE	Sports for All GE III	62555501
	Practical	Practice of Measurement of Health Parameters on Self and others			





Tutorial				
Theory	MENTAL & SPIRITUAL PERSONALITY DEVELOPMENT	SEC	Holistic Personality Development SEC	62553339
Practical	1. Personal identity measurement from health variables. 2. Personality measurement from fitness and from wellness variables.			
Tutorial				
Theory	Effects of Exercise on Skeletal, Muscular, Circulatory and Respiratory	SEC	Wellness and Fitness SEC	62553503
Practical	Basic Anatomical and Physiology of Selected Systems of the Human Body			
Tutorial				

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Name of the Faculty Member: SUJAY JOHN K

Department: PHYSICAL EDUCATION

Year: 2019-20

Month		Topics	Course	Paper Name	Paper Code
January	Theory	Total Fitness: Physical Activity, Concept; Types, Components of Physical Fitness and Principles	GE	Balanced Education	62555629
	Practical	Measurement of Fitness Components			
	Tutorial				
	Theory	Introduction and overview of Sports Industry and Sports Marketing; Contingency Framework for Strategic Sports Marketing	SEC	Sports Industry and Marketing	62553601
	Practical	Marketing Plan: Environmental Factors and Product Plan Draft bibliography/works cited			
	Tutorial				
	Theory	INTRODUCTION & WRITING SKILLS Meaning, scope and changing trends of journalism in sports. Role of journalism in sports promotion Historical development & role of print and electronic media in sports promotion Media, ethics and responsibilities of journalist & editor (social, legal and professional)	SEC	Sports Journalism	62553650

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	Practical	Introduction to Speaking Skills and Write Ups for: exhibitions, fairs, street drama, public speaking, radio, televisions, newspapers, films, posters, pictures, and graphics			
	Tutorial				
	Theory	Obesity & its Assessment Concept and Causes of Obesity Associated with Obesity Mass index (BMI), Waist-Hip Ratio, Skinfold Thickness (Abdomen, triceps, thigh, Supra-iliac) Health Risks Assessment of Obesity - Body	GE	Obesity Management	12555260
	Practical	Use BMI to identify the actual body weight status and desirable body weight status of at least ten students.			
	Tutorial				
	Theory	Posture Concept - Good or Bad; Types; Effects and Deformities	GE	Posture, Athletic Care and First Aid	12555422
	Practical	Identifying Different Postural Deformities - Stretches associated			
	Tutorial				
	Theory	Wealth: Concept HRPF, Principles of Physical Fitness and Technology used to develop fitness	GE	Balanced Education	62555629
February	Practical	Meditation techniques and importance of man-made and natural environment.			
	Tutorial				

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Theory	Environment and Structure of the Sports Industry; Overview of the Strategic Sports Marketing Process ownership Structure, Major and Minor Pro League Sports; Amateur Sports; Unorganized Sports	SEC	Sports Industry and Marketing	62553601
Practical	Understanding the Sports Industry in India			
Tutorial				
Theory	ORGANIZATIONAL AND PRESENTATION SKILLS FOR MEDIA Organizational set-up of a newspaper- printing, process sequences of operations in the printing of a newspaper Introduction of various sports organization and agencies- Olympic Games, Asian games, commonwealth games, awards and trophies. Different types of Write-ups	SEC	Sports Journalism	62553650
Practical	Writing reports of sports events Writing features on sports			
Tutorial				
Theory	Management of Obesity through Diet Nutrition and Balanced Diet Dietary Aids and Gimmicks weight management through diet	GE	Obesity Management	12555260
Practical	Calculate BMR and Waist-Hip ratio of at least ten students.			
Tutorial				

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	Theory	Postural Deformities and their Corrective Exercises Illnesses due to improper posture	GE	Posture, Athletic Care and First Aid	12555422
	Practical	Active and Passive Exercises			
	Tutorial				
March	Theory	Physical Fitness and Wellness Introduction and inter relation between the concepts, factors influencing both concepts	GE	Balance Education	62555629
	Practical	Importance of healthy environmental choices with the help of meditation, exercise and nutritional habits			
	Tutorial				
	Theory	Social Impact of Sports, Sports and Culture: Commercialization : Legal and Ethical Issues; Competition and Aggressiveness as Dominant Social Values	SEC	Sports Industry and Marketing	62553601
	Practical	Developing and Pitching Sponsorship proposal			
	Tutorial				
	Theory	EXTENDED RELEVANT DIMENSIONS Theory and principles of advertising in sports Public relations in sports, press release, conferences Public Relation Media – advertising, press release, conferences, exhibitions, fairs, street drama, public speaking, radio, televisions, newspapers, films, posters, pictures, and graphics	SEC	Sports Journalism	62553650

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	Practical	Designs and make-up of sports page	GE	Obesity Management	12555260
	Tutorial				
	Theory	Weight Management through physical activities and Behaviour modification Importance of maintaining Healthy Weight; Weight Management and Energy Balance			
	Practical	Measurement of Body Composition for calculating body fat and lean body mass			
	Tutorial				
	Theory	Athletic Care Injuries - Principles of Injury prevention; Common Injuries in Sports and Management	GE	Posture, Athletic Care and First Aid	12555422
	Practical	Asanas and their Therapeutic Benefits			
	Tutorial				
April	Theory	Longevity and relation with Success and Happiness	GE	Balance Education	62555629
	Practical	Skills to Managing wellness in self and others.			
	Tutorial				
	Theory	Economic Impact of Sports Sports, Implementing and Controlling the Strategic Sports Marketing Process Research tools for developing a sports story Introduction to various types of information technology Satellite communication: use of satellite in radio and T.V. communication for sports information Globalization and	SEC	Sports Industry and Marketing	62553601

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Practical	Developing a budget plan for an event	Athlete branding			
Tutorial					
Theory	EXTENDED RELEVANT DIMENSIONS Theory and principles of advertising in sports Public relations in sports, press release, conferences Research tools for developing a sports story Introduction to various types of information technology Satellite communication: use of satellite in radio and T.V. communication for sports information		SEC	Sports Journalism	62553650
Practical	Editing sports report Collecting information about current affairs on sports				
Tutorial					
Theory	Principles of weight management; Aerobic & anaerobic. activities Behaviour Modification techniques for weight management		GE	Obesity Management	12555260
Practical	Revision of Practical 1, 2, 3				
Tutorial					
Theory	First Aid, Ergogenic Aids and Rehabilitation; Therapeutic Modalities; Muscle Strengthening		GE	Posture, Athletic Care and First Aid	12555422
Practical	PRICE and FIRST AID				
Tutorial					

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