KUVEMPU UNIVERSITY

DEPARTMENT OF SOCIOLOGY

REVISED SYLLABUS FOR THE BACHELOR OF ARTS UNDER GRADUATE

WITH EFFECT FROM THE ACADEMIC YEAR 2018-19 ONWARDS

KUVEMPU UNIVESITY

UG SOCIOLOGY SYLLABUS

Principal
D. V. S. College Of Arts & Science
Shimoga.

Semester	Title of the Papers	Teaching Hours
I	Paper I - INTRODUCTION TO SOCIOLOGY	90 (06 hours per week)
II	Paper II - STUDY OF INDIAN SOCIETY	90 (06 hours per week)
III	Paper III - RURAL SOCIOLOGY	90 (06 hours per week)
IV	Paper IV - RESEARCH METHODOLOGY	90 (06 hours per week)
V	Paper V - FOUNDATIONS OF SOCIOLOGICAL THOUGHT (Compulsory Paper)	80 (05 hours per week)
	Paper VI - POPULATION STUDIES (Optional Paper)	80 (05 hours per week)
	Paper VI - MEDICAL SOCIOLOGY (Optional Paper)	80 (05 hours per week)
VI	Paper VII - URBAN SOCIOLOGY (Compulsory Paper)	80 (05 hours per week)
	Paper VIII - CURRENT SOCIAL PROBLEMS OF INDIA (Optional Paper)	80 (05 hours per week)
	Paper VIII - INDUSTRIAL SOCIOLOGY (Optional Paper)	80 (05 hours per week)

Principal
D. V. S. College Of Arts & Science
Shimoga.

D. V. S. College Of Arts & Science
Shimoga.

MODEL QUESTION PAPER PATTERN FOR B.A. SOCIOLOGY

- Maximum Marks:80 per Subject
- Examination Duration: 03 Hours
- Each Question paper is divided into three Sections. Viz A, B and C.

SECTION- A

- Short answer Questions
- Answer any four out of Six – 04 x 05 = 20 Marks

SECTION –B

- Medium answer Questions
- Answer any three out of five-03x10=30 Marks

SECTION – C

- Long answer Questions
- Answer any two out of three- 02x15= 30 Marks

Note: The award of Internal Assessment (IA) is based on the performance in one internal test and one skill development activity related to prescribe syllabus. (Weightage: 10 Marks for One Internal Test + 10 Marks for One Skill Development Activity = 20 Marks)

Principal
D. V. S. College Of Arts & Science
Shimoga

I Year BA Semester-I

Paper-I: INTRODUCTION TO SOCIOLOGY

Unit-I: Introduction

The Meaning and Definition of Sociology. Nature, Scope and importance. Development of Sociology in India.

Unit-II: Basic Sociological Concepts

Meaning, Definition and Characteristics of (A) Community (B) Institution (C)Social Structure (D)Role and Status.

Unit- III: Heredity and Environment

A) Heredity- Meaning, Mechanism and the Role of Genes.

B) Environment- Meaning, Types and Influence of Environment on Personality

Unit-IV: Socialization and Culture

A) Socialization- Meaning and Definition, Agencies of Socialization - Family, Education Peer Group, Mass Media. Importance of Socialization. Theory of Looking glass self.

B) Culture- Meaning and Definition. Characteristics and Recent Trends.

Unit-V: Social Control:

Meaning, Definition and Importance of Social Control.

Types –Formal (law and education),Informal (folkways and mores)

Unit-VI: Social Change:

Meaning, Definition and Characteristics. Factors of Social Change-Physical, Biological, Cultural and Technological.

Reference Books

1. Gisbert - Fundamentals of sociology. Ed. 3rd, Pub. Orient Black Swan Publication1973
2. Harry M Johnson- Sociology – A Systematic Introduction. First published in 1998. Routledge is an imprint of Taylor & Francis, an informa company.
3. Jayaram, N- Introduction to sociology, Rawat Publications, 2015
4. Kingslay Devis - Human society.4th edition pub. Macmillan Company, 1952
5. Shankar Rao, C.N - Sociology. Edition Reprint, S. Chand Limited, 1990

Principal
D. V. S. College Of Arts & Science
Shimo

I Year BA SEMESTER-II

PAPER-II: STUDY OF INDIAN SOCIETY

Unit- 1 Indian culture

Characteristics - Spiritual basis, Universal Outlook, Spirit of Inquiry, Unity in Diversity, Integral Approach, Harmony with Nature, Tolerance, Respect of Women hood.

Unit-II: Caste System:

Meaning, Definition, Positive and Negative aspects of Caste System. Caste and politics.

Unit-III: Hindu Marriage and Family:

a) Objectives of Hindu Marriage, Recent trends and legislation (Hindu Marriage Act, Special Marriage Act and Dowry prohibition Act)
b) Family: i) Joint family- Meaning, Definition, Merits and Demerits.
ii) Nuclear Family- Meaning, Definition and Functions.

Unit-IV: Status of Indian Women

a) Status of Hindu Women through the Ages
b) Status of Christian Women
c) Status of Muslim Women

Unit V: Social Stratification

Meaning, Definition and Characteristics

Unit-VI: Backward Class and Minority

a) Tribal of India- Meaning, Definition and Problems of Tribals.
b) Schedule Caste- Meaning, Problems of SCs. Protection of Civil Rights Act.
c) Backward Class Movement with special reference to Karnataka
d) Religious Minorities- Problems of Muslims and Christians.

Reference Books

1) Ghurye, G.S - Caste and race in India.Pub. Popular Prakashana Bombay.
2) Kapadia KM - Marriage and Family in India, Ed.3, Oxford University Press, 1972
3) Prabhu, P.H - Hindu Social Organization. (I.S.I. Publications, New Delhi: Sterling Publishers (P) Ltd., 1972),
4) Ram Ahuja - Indian Social System. Ed. Reprint, Rawat Publ., 2006
5) Ramachandra Rao S. K- Social Institutions among the Hindus. Wesley Press, Mysore, the printers of this book- Bangalore
6) Srinivas, M.N. - Caste in Modern India and other Essays. Media Promoters & Publishers, 1989

Principal
D. V. S. College Of Arts & Science
Shimoga.

II Year BA SEMESTER –III

PAPER – III: RURAL SOCIOLOGY

Unit – I: Introduction

Meaning, Definitions, Scope and Importance of Rural Sociology. Historical Development of Rural Sociology with special reference to India. Characteristics of Rural Community. Villages in India: Types, Changes in Rural Society.

Unit-II: Rural Problems:

Problems and Remedies of (1) Agriculture (2) Cottage Industries (3) Child and Women Labour (4) Health and sanitation (5) Farmer's Suicide.

Unit III: Globalization and Rural Change

Meaning, Definition, Characteristics and Impacts of Globalization on Rural Change.

Unit –IV: Rural Political Structure

Panchayat Raj -Objectives, Structure and Functions with special reference to Karnataka. Role of Women in Panchayat, Crisis in Rural Politics.

Unit-V: Rural Development

(1) Role of NGO's in Rural Development (2) Self Help Groups
(3) SEZ (Special Economic Zone):- Positive and Negative Aspects (4) Rural Leadership

Reference Books

1) Boden, Powell - The Indian Village Community, the University of California, Longmans, Green, and Company, 1896
2) Desai, A. R. - Rural Sociology in India , Pub. Popular Prakashan
3) Chidambaram Introduction to Rural Sociology –, John Wiley & Sons Canada, Limited, 1977
4) Dube, S.C. - Indian Villages, First published in 1998. Rutledge is an imprint of Taylor & Francis, an informa company.
4) Gurumurty , U - Panchayath Raj and the Weaker Sections, New Delhi, Ashish Publishing House, 1987, xiii, 211 p.
5) Jain, S. C., Community Development and Panchayati Raj in India, Allied Publishers, Bombay, 1967. Jayaswal, K. P., Hindu Polity, The Bangalore Printing and Publishing Company, Bangalore, 1967.
6) Madan, G.R. - The Indian Rural Problems, Allied Publishers
7) Nanavathi, M.B and Anjaria, J. J - The Indian Raral Problems, Pub. (the Indian Journal of Statistics), Calcutta, Vol. 7, Part 3, 1946.

Principal
D. V. S. College Of Arts & Science
Shimoga.

II Year BA SEMESTER – IV

PAPER –IV: RESEARCH METHODOLOGY

Unit –I: Social Research

Meaning, Definitions, Types and Qualities of Social Researcher. Research Design (Meaning and Uses). Stages of Social research. Uses and Limitations of Social Research.

Unit-II: Social Survey

Meaning, Definitions, Types, Advantages and Limitations.

Unit – III: Sampling

Meaning, Definitions, Types, Advantages and Limitations.

Unit-IV: Observation

Meaning, Definitions, Types, Advantages and Limitations.

Unit - V: Questionnaire

Meaning, Definitions, Types. Schedule- Meaning and Characteristics. Construction of Mailed Questionnaire, Uses and Limitations.

Unit – VI: Interview

Meaning, Definitions, Types, Advantages and Limitations.

Unit-VII: Report Writing

Interpretation of Data- Classifications, Editing, Coding and Tabulation.
Report Writing- Meaning, Contents of Report.

Reference Books

1) Ahuja, Ram - Research Methods, Reprint, Rawat Publications, 2001
2) Goode and Hatt - Methods in Social Research, Surjeet Publication, 2006
3) Gopal, M.H - Introduction to Research Procedure in Social Science, Asia Publishing House, 1964
4) Clause Adolf Moser - Survey Methods in Investigation, Ed. 2, reprint, Pub. Gower, 1979 Cornell, University12 Jan 2009
5) Raj, Hans - Theory and Practice in Social Research, Pub. Surjeet Publications, 1979
6) Sharma, BAV., Prasad ,Ravindra., Sathyanarayana, P - Research Methods in Social Science (New Delhi : Sterling, 1985),
7) Wilkinson and Bandarkar - Methodology and Techniques of Social Research. Ed.9 Himalaya Publishing House, 1999
8) Young, P.V- Scientific Methods in Social Survey and Research, Editor Herbert Blumer, Literary Licensing, LLC, 2012

Principal
D. V. S. College Of Arts & Science
Shimoga.

III Year BA SEMESTER -V

PAPER-V: FOUNDATIONS OF SOCIOLOGICAL THOUGHT (Compulsory Paper)

Unit –I: Development of Sociological Thought
Meaning, Definition and Importance. Stages of Social thought.

Unit – II: Auguste Comte: Brief Life History and his contributions - (a) Law of Three Stages
(b) Hierarchy of Sciences (c) Religion of Humanity.

Unit-III: Herbert Spencer: Brief Life History and his contributions - (a) The law of Evolution
(b) The organic Analogy.

Unit-IV: Emile Durkheim: Brief Life History and his contributions:- (a) Division of Labor
(b) Typology of Suicide.

Unit –V: Max Weber: Brief Life History and his contributions - (a) Bureaucracy
(b) Social Action.

Unit – VI: Karl Marx: Brief Life History and his contributions - Class Struggle.

Unit-VII: Indian Sociologist

a) A.R. Desai – Brief Life history and his contributions on Rural Society
b) M.N. Srinivas- Brief Life history and his contributions on - (a) Social Mobility (b) Dominant Caste.
c) Iravati Karve – Brief Life history and her contributions on Kinship Organization in India.

Reference Books

1) Raymond Aron - Main Currents in Sociological Thought. Transaction Publishers, 1998
2) Emory Stephen Bogardus - The Development of Social Thought, Longmans, Green, 1947
3) Chambliss, Rollin - Social Thought, Pub.Fb&c Limited, 30-Sep-2016
4) Collin. R and Makowsky M.-The Discovery of Society,Pub. McGraw-Hill, 2010
5) Lewis A Coser- Masters of Sociological Thought: Ideas in Historical and Social Context,Pub, Waveland Press, 2003
6) Nishet R - The Sociological Tradition.Ed.Reprint, revised,Pub Transaction Publishers, 1993

Principal
D. V. S. College Of Arts & Science
Shimoga.

III Year BA SEMESTER – V

PAPER –VI: POPULATION STUDIES (Optional Paper)

Unit –I: Meaning and Definitions of Population Studies:

Development of Population Studies in general. Development of Population Studies in India and Importance of its Study.

Unit-II: Source of Population:

1) Census: Meaning and Importance of Census, Procedure and Problems of Census Taking.
2) Civil Registration System: Meaning and Importance.

Unit –III: Population Theories:

a) Malthusian theory of Population with critical evaluation.
b) Optimum population theory with critical evaluation.
c) Demographic transition theory with critical evaluation.

Unit-IV: Compositional Characteristics of Population:

Age and Sex -Meaning and Importance. Dependency Ratio, Population Pyramid, Ageing of Population.

Unit-V: Demographic Process:

Fertility- Birth Process. Influencing Factors:- Socio- Cultural and Physiological Factors.

Mortality – Meaning and causes of Mortality.
Infant and Maternal Mortality - Meaning and Causes.
Migration – Meaning, Types, and Determinants of Migration.

Unit –VI: Population in India:

a) Causes and Effects of Over Population.
b) Family Planning: Meaning, Objectives, Methods, Success and Failure.
c) Population Education: Objectives and Importance.
d) Family Welfare Program: Meaning and Objectives.

Reference Books

1. Agarwal, S.N. - Some Problems of India's Population, Publisher Vora, 1966, the University of Michigan.
2. Bhende , Asha and Kanitkar, Tara - Principles of Population Studies, Himalaya Publishing House, 1994
3. Cox, Peter R. Demography. Cambridge University Press, 1955. Pp. 11–67. Eldridge,
4. Andrew G. Onokerhoraye- Population Studies, A.G. Onokerhoraye, 1985, Indiana University.
5. Kuppu Swamy : Population and Society in India, Popular Prakashan Private Ltd., 1975,
6. Thomson and Lewis - Population Problems,5th edition, Publisher, McGraw-Hill, 1970

Principal
D. V. S. College Of Arts & Science
Shimoga.

III Year BA SEMESTER – V

PAPER –VI: MEDICAL SOCIOLOGY (Optional Paper)

Unit I: Medical Sociology

a. Health: Goals and Definitions
b. Related Terms/; Sociology of Health and Sociology of Disease
c. Difference between Sociology of Medicine and Sociology in Medicine

Unit II: Constructing Illness

a. Definitions of Illness, Sick and Disease
b. Sick Role- Role of Nurses and other Paramedics
c. Stigma of Mental Illness and HIV Positive

Unit III: Socio-Cultural Determinants of Health

Family, Gender, Housing, Sanitation, Environment, Nutrition and Cultural Practices.

Unit IV: Healthcare and Systems

a. Hospital as a Social Institution
b. Role of Pharmaceutical Industry and Advertisements
c. Introduction of Healthcare Systems- Folk Medicine/ Ethnomedicine, Ayurveda, Unani, Siddha, Yoga, Homeopathy and Allopathy

Unit V: Healthcare Delivery in India

a. Health Policies, Mental Health Policies
b. Overview of Health Programmes related to Women, Children and the Disabled

Reference Books

1. Albert, Gary L. and R. Fitzpatrick (1994). Quality of Life In Healthcare: Advances in Medical Sociology, Mumbai: Jai Press.
2. Annandale Allen (2001). The Sociology of Health and Medicine- A Critical Introduction, Cambridge: Polity Press.
3. Bloom, Samuel W. (1963). The Doctor and His Patient, New York: Free Press.
4. Chloe Bird, Peter Conrad and Alan Fremont eds. (2000). Handbook of Medical Sociology, New York: Prentice Hall.
5. Cocker ham, William C. (1997). Medical Sociology, New Jersey, Prentice Hall.
6. Coe, Rodney M, (1970). Sociology of Medicine, New York: McGraw Hill.
7. Conrad, Peter ed. (2005). Sociology of Health and Illness: Critical perspectives, New York: Worth Publishing.
8. Dutta, P.R. (1955). Rural Health and Medical Care in India, Amble: Army Education Press.
9. Schwartz, Howard (1994). Dominant Issues in Medical Sociology, New York: McGraw Hill.
10. Venkataratnam, R (1979). Medical Sociology in an Indian Setting, Madras:

Principal
M. V. S. College Of Arts & Science
Shimoga.

III Year BA SEMESTER – VI

PAPER-VII: URBAN SOCIOLOGY (Compulsory Paper)

Unit-I: Urban Sociology and Urban Community

a) Urban Sociology – Introduction, Definition, Scope and Importance.
b) Urban Community-Characteristics, Distinction between Rural-Urban Communities.

Unit-II: Urbanism and Urbanization

a) Urbanism-Meaning and Definition.
b) Urbanization-Meaning and Definition. Factors responsible for Urbanization. Urbanization in India. Theories of Urbanization- (i) Concentric zone circle theory (ii) Sector theory.

Unit-III: Industrialization and Work

a) Industrialization-Meaning, Industrialization and Social Change, Effects of Industrialization
b) Work- Social Importance of work

Unit-IV: Urban Problems

Causes, Effects and Remedies of:

a) Housing Problem
b) Slum Problem
c) Problems of Sex Workers (Prostitution)
d) Drug Addiction

Unit-V: Urban Planning and Development

a) Urban Planning-Meaning, Objectives, Problems of Urban Planning in India.
b) Urban Development – Meaning, Objectives and Agencies of Urban Development.

Reference Books

1. Ahuja, Ram- Social problem in India Rawat Publications; 3rd Revised & Updated edition (2014)
2. Slums and urbanization. /Edited by A. R. Desai and S. Devadas Pillai. Bombay : Popular Prakashan, [1970]
3. Burgell Ernest - Urban Sociology ,University of Chicago Press; Abridged edition (June 1, 1967)
4. Madan, G.R - Indian Social Problems (Vol-1): Social Disorganization and Reconstruction Volume 1 of Seventh edition, Allied Publishers, 1966
5. Rao, M. S. A. - Urban Sociology in India. Orient Longman, 1992

Principal
D. V. S. College Of Arts & Science
Shimoga.

III Year BA SEMESTER – VI

PAPER-VIII: CURRENT SOCIAL PROBLEMS OF INDIA (Optional Paper)

Unit- I: Structural Problem

a) Casteism: Meaning, Definitions, Causes, Effects and Remedies.
b) Communalism: Meaning Definitions, Causes, Effects and Remedies (Social and legal).

Unit-II: Familial problems

a) Problems of Aged: Meaning, Definitions, Causes, Effects and Remedies.
b) Gender Discrimination: Meaning, Definitions, Causes, Effects and Remedies.
c) Domestic problems:
   1. Dowry- Act of 1961 and 1986.
   2. Divorce – Meaning and Definition. Divorcee as Social Evil. Causes and Remedies

Unit-III: Developmental problems

(a) Regional Disparities: Meaning, Definitions, Causes, Effects, Remedies and Legislations (Article – 371(J)).
(b) Globalization: Meaning, Definitions, Causes and Effects-positive and Negative Impacts.

Unit-IV: Organizational problems:

a) Terrorism: Meaning, Definitions, Causes, Effects Remedies and Legislations.
b) Corruption: Meaning, Definitions, Causes, Effects and Remedies. The role of Lokayukta and CBI.
c) Youth Unrest: Meaning, Definition, Causes, Effects and Remedies.
d) Juvenile Delinquency: Meaning, Definition, Types, Causes, Effects and Remedies (Social and Legal).

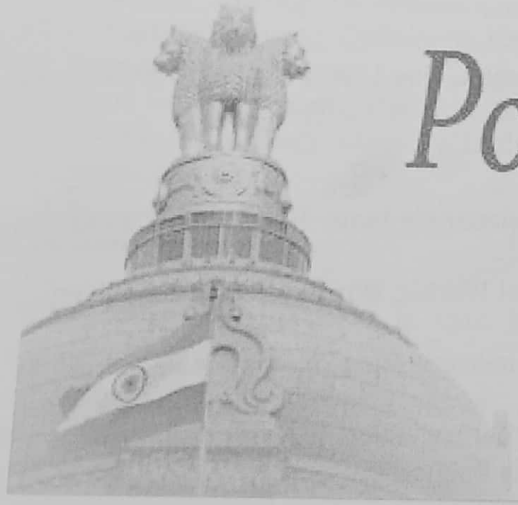
Reference Books

1. Ahuja, Ram- Social problem in India Rawat Publications; 3rd Revised & Updated edition (2014)
2. ATTAR, A D: Juvenile delinquency: A comparative study. (Popular Prakashan, Bombay, 1964)
3. Gerald Berreman. "Social Inequality: A Cross-Cultural Analysis" in Social Inequality: Comparative and Developmental Approaches, pp. 3–40. Ed. New York: Academic Press.
4. Ghurye, G.S Social Tensions in India. Bombay: Popular Prakashan, 1968. xi + 552 pp., index. Rs. 72 (cloth).

Principal
V. S. College Of Arts & Science
Shimoga.

KUVEMPU UNIVERSITY

Jnana Sahyadri - Shankara Ghatta
Shimoga



Political Science

Under Graduate Syllabus

Principal
D. V. S. College Of Arts & Science
Shimoga.

KUVEMPU UNIVERSITY

SYLLABUS

COURSE: B. Sc. MATHEMATICS

Revised on: 2017-18

With Effective from A/Y: 2018-19

DEPARTMENT OF PG STUDIES AND RESEARCH IN MATHEMATICS,
KUVEMPU UNIVERSITY,
JNANA SAHYADRI,
SHANKARAGHATTA- 577 451
SHIVAMOGGA, KARNATAKA, INDIA.
PHONE; 08282 257310
FAX: 08282 256221
WEB : www.kuvempu.ac.in

Principal
V. S. College Of Arts & Science
Shimoga.

VI SEMESTER PRACTICAL – VIII

(One experiment per week to be conducted in 3 hours duration)

1. Transistor characteristics.
2. OP – AMP – using IC 741 – non - inverting amplifier, frequency response, gain calculation for
   different feedback resistances, - band width and gain band width.
3. OP AMP: Filter circuits.
4. Logic gates: Construction and study of AND, OR, NAND, and NOR gates using IC 7402
5. Astablemultivibrator: - using IC -555 – determination of output frequency and duty cycle.
6. Energy gap of semiconductor using meter bridge- determination of unknown temperature (melting point of wax) by graph.
7. Mutual inductance by absolute method using B.G.
8. G.M counter – Absorption coefficient of aluminum.
9. Hall Effect: Measurement of Hall co – efficient.
10. AM – Modulator and demodulator –construction using transistor or IC –measuring depth of modulation.
11. Determination of Fermi energy of copper using meter bridge.
12. FET Amplifier – Common source – frequency response, band width and gain bandwidth

NOTE:

1. Suitable and relevant experiments may be included.
2. Experiments mentioned in V and VI semester may be redistributed depending upon the facilities available in the laboratory.
3. Minimum of 8 experiments should be done in each practical.
4. Experiment should be elaborative so as to extend for 3 hours duration.
5. Error estimation may be included for few experiments

Principal
D. V. S. College Of Arts & Science
Shimoga.

KUVEMPU UNIVERSITY

Syllabus

B.Sc. Mathematics (Theory and Practicles)

I SEMESTER

Paper - BSM 1: Algebra - I and Calculus - I

Total: 78 Hrs

Matrices: Symmetric and Skew Symmetric matrices, Algebra of Matrices; Row and column reduction, Echelon form, Rank of a matrix; Inverse of a matrix by elementary operations; Solution of system of linear equations; Criteria for existence of non-trivial solutions of homogeneous system of linear equations. Solution of non-homogeneous system of linear equations. Eigen values and Eigen vectors of square matrices, real symmetric matrices and their properties, reduction of such matrices to diagonal form, Cayley-Hamilton theorem, inverse of matrices by Cayley-Hamilton theorem.

02hrs/week=30hrs

Polar Co-ordinates: Polar coordinates, angle between the radius vector and tangent. Angle of Intersection of curves (polar forms), pedal equations. Derivative of an arc in Cartesian, parametric and polar forms, curvature of plane curve-radius of curvature formula in Cartesian, parametric and polar and pedal forms- center of curvature.

Successive Differentiation: nth Derivative of $(ax+b)^m$, $\log(ax+b)$, e^{ax}, $e^{ax}\sin(bx+c)$, $e^{ax}\cos(bx+c)$, $\sin(ax+b)$, $\cos(ax+b)$, Leibnitz theorem (with proof) and applications.

Function of two and three variables: continuity, partial derivatives EULERS Theorem, maxima and minima (Two variables).

03hrs/week=48hrs

Reference Books:

1. Topics in Algebra - I N Herstain, Publisher John Wiley & Sons.
2. University Algebra - N.S. Gopalakrishnan, New Age International (P) Limited
3. Theory of Matrices - B S Vatsa, New Age International Publishers.
4. Matrices - A R Vasista, Krishna Prakashana Mandir.
5. Elements of Real Analysis - Shanti Narayan, S. Chand & Company, New Delhi.
6. Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi.
7. Calculus – Lipman Bers, Holt, Rinehart & Winston.
8. Calculus - S Narayanan & T. K. Manicavachogam Pillay, S. Viswanathan Pvt. Ltd., vol. I & II.
9. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw Hill., 2008.

Principal
D. V. S. College Of Arts & Science
Shimoga.

Structure of B.Sc. Mathematics papers

Semester	Title of the paper		Teaching hrs/week	Duration of Exam (hrs)	IA MARKS	EXAM MARKS	TOTAL MARKS	Semester Total
I	BSM 1	Theory	5 hrs	3 hrs	10	70	80	100
		Practical	3 hrs	3 hrs	-	20	20*	
II	BSM 2	Theory	5 hrs	3 hrs	10	70	80	100
		Practical	3 hrs	3 hrs	-	20	20	
III	BSM 3	Theory	5 hrs	3 hrs	10	70	80	100
		Practical	3 hrs	3 hrs	-	20	20	
IV	BSM 4	Theory	5 hrs	3 hrs	10	70	80	100
		Practical	3 hrs	3 hrs	-	20	20	
V	BSM 5	Theory	4 hrs	3 hrs	10	70	80	100
		Practical	2 hrs	3 hrs	-	20	20	
	BSM 6	Theory	4 hrs	3 hrs	10	70	80	100
		Practical	2 hrs	3 hrs	-	20	20	
VI	BSM 7	Theory	4 hrs	3 hrs	10	70	80	100
		Practical	2 hrs	3 hrs	-	20	20	
	BSM 8	Theory	4 hrs	3 hrs	10	70	80	100
		Practical	2 hrs	3 hrs	-	20	20	

* In the Practical component outof 20 marks: 15 for practical exam + 3 for vivo +2 for lab record.

Principal
D. V. S. College Of Arts & Science
Shimoga.

PRACTICAL – 1:

Total: 42Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs
(3 hours/ week per batch)
Softwares used: 1. Maxima
2. Scilab

Level - 1: Fundamental Computer Applications

1. **Word:** Creating documents, saving in personal folders, sending files to the other users through email-id (documents include all kind of mathematical equations with Greek letters, differentiations, integrations, matrices, vectors, etc.).
2. **Excel:** Creating documents, save in personal folders, sending files through emails to other users (documents contains employees' salaries, students' marks with total, average, division, student attendance list, etc.).
3. **Power point:** Create power point presentation documents which includes Mathematical equations and solutions, programs copy from Scilab, Maxima etc.
4. **Mails creation:** Creating email-id through sign up through Google/Yahoo/Rediff etc. attaching files, sending messages to other mail-ids.

3 hrs/week - 12 hrs.

Level - 2: Basics in Scilab and Maxima

1. **Procedure of opening Scilab console and Scilab notes.**
   a) Writing mathematic functions and commands on console.
   b) Writing procedure – syntax in Sci-notes (i) If, (ii) If-else, (iii) nested-if, (iv) while-loop, (v) for-loop with example, (vi) Arrays, etc.

   Examples:

   - Various commands on Matrices (Addition of matrices, Multiplication of matrices, Inverse of the Matrix, etc.)
   - Programs to find the age for eligible to vote.
   - Programs to calculate the total and average of marks of students and check the division.
   - Program to reduce the given matrix into lower triangular and upper triangular matrices
   - Program to find Row reduced echelon form and normal form forgiven matrices.
   - Program to test consistency of system of linear equations and solutions.

   3 hrs/week - 15 hrs.

2. **Procedure of opening Maxima window for writing commands and programs.**
   a) Writing mathematic functions and commands on Maxima window.
   b) Writing procedure – syntax in Maxima window (i) If, (ii) If-else, (iii) nested-if, (iv) while-loop, (v) for-loop with example, (vi) Arrays, etc.

   Examples:

   - Various commands on Matrices (Addition of matrices, Multiplication of matrices, Inverse of the Matrix, etc.)
   - Programs to find the age for eligible to vote.
   - Programs to calculate the total and average of marks of students and check the division.
   - Program to find Eigen values and Corresponding Eigen vectors of the matrix using MAXIMA.

Principal
D. V. S. College Of Arts & Science
Shimoga.

Equations of first order and higher degree. Solvable for p, Solvable for x (singular solutions), Solvable for y (singular solutions) and Clairaut's equation. Orthogonal trajectories. Second and higher order linear differential equations with constant co-efficient, complementary functions, Particular integral, standard types, Cauchy-Euler differential equations. Simultaneous differential equations with constant co-efficient (two variables).

03hrs/week=48hrs

Reference Books:

1. Higher algebra - Bernard & Child, Arihant, ISBN: 9350943199/ 9789350943199.
2. Topics in Algebra - I N Herstain, Wiley Eastern Ltd., New Delhi.
3. Modern Algebra - Sharma and Vashishta, Krishna Prakashan Mandir, Meerut, U.P.
4. Textbook of BSc Mathematics - Chakravarthy L.N, Vol 2, ISBN:1234567176245, Chethana Book House.
5. Ordinary and Partial Differential Equations - M D Raisinghania, S. Chand and Co. Pvt. Ltd.
6. Schaum's outline of theory and problems of Differential Equations - Frank Ayres, McGraw-Hill Publishing Co.
7. Differential Equations and Its Applications - S Narayanan and T K Manicavachagom Pillay, S V Publishers Private Ltd.
8. Differential equation with Applications and Historical Notes - G F Simmons, 2nd ed. McGraw-Hill Publishing Company.

PRACTICAL - 3

Total: 42 Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs
(3 hours/ week per batch)
Softwares used: 1. Maxima
2. Scilab

LIST OF PROGRAMMES

1. Program to test normality of a given subgroup and a group using SCILAB.
2. Program to test homomorphism of a give function from $G \rightarrow G'$using SCILAB.
3. Program to test isomorphism of a given function from $G \rightarrow G'$ using SCILAB.
4. Program to find the solution of given differential equation using Maxima and plotting the Solution-I. (1st order 1st degree non-linear)
5. Program to find the solution of given differential equation using Maxima and plotting the solution-II. (1st order 1st degree linear)
6. Program to find the solution of given differential equation using Maxima and plotting the solution-III. (1st order but not of 1st degree)
7. Program to find complementary function and particular integral of given differential equation with constant coefficients.
8. Program to find solution of given simultaneous differential equations with constant coefficients.
9. Programs for plotting curves in 2D Plane which are in Cartesian form.
10. Programs for plotting curves in 2D Plane which are in polar form.
11. Programs for plotting curves in 2D Plane which are in Parametric form.
12. Programs for plotting curves in 3D space using MAXIMA/SCILAB.

Principal
n V. S. College Of Arts & Science

PRACTICAL - 2

Total: 42 Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs
(3 hours/ week per batch)
Softwares used: 1. Maxima
2. Scilab

LIST OF PROGRAMMES

1. Program to construct Cayley table and test abelian for given finite set using SCILAB.
2. Program to test abelian group properties for given finite set using SCILAB
3. Program to find all possible cosets of the given finite group using SCILAB
4. Program to find all generators and corresponding all possible subgroups for the given cyclic group using SCILAB
5. Programs to verify Lagrange's theorem for given finite group.
6. Program to verify the Euler's theorem for given finite group using SCILAB.
7. Programs for finding limits by comparing left and right limits using MAXIMA
8. Programs for testing continuity of the function at $x = a$ and x in $[a, b]$ using MAXIMA
9. Programs for testing differentiability of the function at $x = a$ and x in (a, b) using MAXIMA
10. Programs to verify Rolle's theorem for given function using MAXIMA
11. Programs to verify Lagrange's mean value theorem for given function using MAXIMA
12. Programs to verify Cauchy's Mean value theorem using MAXIMA
13. Programs to verify Taylor's Mean value theorem using MAXIMA
14. Programs to construct series using Maclaurin's series
15. Programs to find limit of the function using L'Hosptal's rule.

III SEMESTER

Paper - BSM 3: Algebra - III and Differential Equations - I

Total: 78 Hrs

Group Theory: Normal Subgroups, definition, examples and standard theorems on normal subgroups. Quotient groups, Homomorphism, isomorphism and fundamental theorem of homomorphism of groups.

02hrs/week=30hrs

Ordinary Differential Equation: Definition of an ordinary differential equation, its order and degree. Classification of solutions. Solution of first degree and first order equations.
(1) Variable separable
(2) Homogeneous and reducible to homogeneous form.
(3) Linear and Bernoulli's form
(4) Exact equations and reducible to exact form with standard I.F. Necessary and sufficient condition for the equation to be exact.

Principal
D. V. S. College Of Arts & Science
Shimoga.

2. Scilab

LIST OF PROGRAMMES

1. Program to find the solution of Differential Equations by finding complimentary functions
2. Program to find the solution of Differential Equations by changing independent variable.
3. Program to find the solution of Differential Equations by changing dependent variable.
4. 4Program to test for exactness and solve the Differential Equations of second order.
5. Program to illustrate convergence, divergence or oscillatory of the given sequence using SCILAB/MAXIMA.
6. Program to illustrate convergence, divergence or oscillatory of the given series using SCILAB/MAXIMA.
7. Using Cauchy's criterion to determine convergence of the given sequence.
8. Using Cauchy's criterion to determine convergence of the given series.
9. Program to test the convergence of the series using Leibnitz's theorem.

V SEMESTER

Paper - BSM 5: Differential Equations– III, Fourier series and Algebra-IV

Total: 60 Hrs

Total and Simultaneous Differential Equations: Necessary condition for the equation $P\,dx + Q\,dy + R\,dz = 0$ to be integrable-problems there on. Solutions of equation of the $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$.

Partial Differential Equations: Formation of partial differential equation –Lagrange's linear equation:$Pp + Qq = R$. Four standard types of first order partial differential equations, Charpit's methods.

Fourier Series: Periodic functions and properties-Fourier series of functions with period 2π and period 2L. Half range cosine and sine series.

02hr/week=30hrs

Rings, Integral Domains and Fields: Rings- Definition, Types of rings. Examples properties of rings - Rings of Integers Modulo-n - Integral domains - Fields. Examples - subrings - Ideals -Principal ideals, Maximal ideal commutative rings, examples and standard properties- Homomorphism and Isomorphism - properties of homomorphism of rings. Quotient rings.

02hrs/week=30hrs

Reference Books:

1. Ordinary and Partial Differential Equations - M D Raisinghania, S. Chand and Co. Pvt. Ltd.
2. Schaum's outline of theory and problems of Differential Equations - Frank Ayres, McGraw-Hill Publishing Co.
3. Differential Equations and Its Applications - S Narayanan and T K Manicavachagom Pillay, S V Publishers Private Ltd.

Principal
D. V. S. College Of Arts & Science
Shimoga.

IV SEMESTER

Paper - BSM 4: Differential Equations - II and Analysis

Total: 78 Hrs

Ordinary Linear Differential Equations: Solution of ordinary second order linear differential equation with variable coefficients by the methods:

1. When a part of complementary function is given,
2. Changing the independent variable,
3. Changing the dependent variable,
4. When a first integral is given (exact equation),
5. Variation of parameters

02hrs/week=30hrs

Sequence of Real Numbers: Definition of a sequence, limits of a sequence, algebra of limit of a Sequence-Convergent, Divergent and Oscillatory sequence problems there on. Bounded sequence; every convergent sequence is bounded-converse is not true, Monotonic Sequence and Their properties, Cauchy's sequence.

Infinite Series: Definition of convergent, divergent and oscillatory of series - standard properties and results, Geometric and Hyper geometric series. Cauchy's criterion (statement only). Tests of convergence of series - comparison tests - D'Alemberts Ratio test - Raabe's test - Cauchy's root test. The Integral test - Absolute Convergence and Leibnitz's test for alternating series.

03hrs/week=45hrs

Reference Books:

1. Ordinary and Partial Differential Equations - M D Raisinghania, S. Chand and Co. Pvt. Ltd.
2. Schaum's outline of theory and problems of Differential Equations - Frank Ayres, McGraw-Hill Publishing Co.
3. Differential Equations and Its Applications - S Narayanan and T K Manicavachagom Pillay, S V Publishers Private Ltd.
4. Differential equation with Applications and Historical Notes - G F Simmons, 2nd ed.: McGraw-Hill Publishing Company.
5. Elements of Real Analysis - Shanti Narayan, S. Chand & Company, New Delhi.
6. Mathematical Analysis - S. C. Malik, Savita Arora, New Age Science Ltd.
7. Principles of Mathematical Analysis - Walter Rudin, McGraw-Hill Publishing Company.

PRACTICAL - 4

Total: 42 Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs
(3 hours/ week per batch)
Softwares used: 1. Maxima

Principal
B. V. S. College Of Arts & Science
Shimoga.

transforms of unit step functions - Inverse Laplace transforms - problems. Convolution theorem - Simple initial value problems - Solution of first and second order differential equations with constant coefficients by Laplace transform method.

02hrs/week=30hrs

Reference Books:

1. Integral Calculus - H.S. Dhami, New Age International Pvt. Ltd Publishers.
2. Text Book of Multiple Integrals - A.K. Sharma, Discovery Publishing House, New Delhi.
3. Differential and Integral Calculus, Vol. II - N. Piskunov, CBS Publishers & Distributors Pvt. Ltd.
4. Mathematical Analysis - S. C. Malik, Savita Arora, New Age Science Ltd.
5. Higher Engineering Mathematics - B.S. Grewal, Khanna publishers.
6. Advanced Engineering Mathematics by Erwin Kreyszig, Wiley; Ninth edition, ISBN:8126531355
7. Schaum's Outline of Laplace Transforms - Murray Spiegel, McGraw-Hill Education
8. Laplace and Fourier Transforms - M. D. Raisinghania, New Delhi, India: S. Chand and Co. Ltd.

PRACTICAL - 6

Total: 30Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs
(2 hours/ week per batch)
Softwares used: 1. Maxima
2. Scilab

LIST OF PROGRAMMES

1. Evaluation of the line integral with constant limits.
2. Evaluation of the double integral with constant limits.
3. Evaluation of the triple integral with constant limits.
4. Evaluation of the line integral with variable limits.
5. Evaluation of the double integral and triple integral with variable limits.
6. Evaluation of area of the surface as double integral.
7. Evaluation of volume of the solid as a triple integral.
8. Finding the Laplace transforms of some standard functions.
9. Finding the inverse Laplace transform of simple functions.
10. Program to Verify of Convolution Theorem.
11. Program to find the solution of a differential equation using Laplace transform method.

Principal
D. V. S. College Of Arts & Science
Shimoga,

4. Differential equation with Applications and Historical Notes - G F Simmons, 2nd ed.: McGraw-Hill Publishing Company.
5. Topics in Algebra - I N Herstain, Wiley Eastern Ltd., New Delhi.
6. Modern Algebra - Sharma and Vashishta, Krishna Prakashan Mandir, Meerut, U.P.
7. Textbook of BSc Mathematics - Chakravarthy L.N., Vol 2, ISBN:1234567176245, Chethana Book House.

PRACTICAL - 5

Total: 30Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs
(2 hours/ week per batch)
Softwares used: 1. Maxima
2. Scilab

LIST OF PROGRAMMES

1. Program to find the solution of the given total differential equation.
2. Program to find the solution of the given simultaneous differential equations.
3. Program to find the solution of the given partial differential equation.
4. Program to find whether given finite set is ring or not?
5. Program to show whether given subset of a finite ring is a subring or Not?
6. Program to find whether given subset of a finite ring is an ideal or not?
7. Program to find whether given function is a homomorphism or not?
8. Program to find whether given function is an isomorphism or not?
9. To plot periodic functions with period 2π and 2L
10. To find full range trigonometric Fourier series of some simple functions with period 2π and 2L.
11. Plotting of functions in half-range and including their even and odd extensions.
12. To find the half-range sine and cosine series of simple functions.
13. To find the half-range sine and cosine series of simple functions.

V SEMESTER

Paper - BSM 6: Line and Multiple Integrals and Laplace Transforms

Total: 60 Hrs

Line and Multiple Integrals: Definition of line integral and basic properties, examples on evaluation of line integrals. Definition of double integrals, evaluation of double integrals (1) under given limits (2) In regions bounded by given curves - change of variables, surface area as double integrals. Definition of triple integrals and evaluation, change of variables, volume as a triple integral.

02hrs/week=30hrs

Laplace Transforms: Definition and basic properties - Laplace transforms of e^{kt}, $\cos kt$, $\sin kt$, t^n, $\cosh kt$ and $\sinh kt$ - Laplace transform of $e^{at}F(t)$, $t^n F(t)$, $F(t)/t$ - problems - Laplace transform of derivatives of functions - Laplace transforms of integrals of functions - Laplace

PRACTICAL - 7

Total: 30Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs
(2 hours/ week per batch)
Softwares used: 1. Maxima
2. Scilab

LIST OF PROGRAMMES

1. Program to verify given set is vector space or not?
2. Program to find whether given set is L.I or L.D.
3. Program to verify whether given function is basis or not?
4. Program to verify given mapping is Linear transformation or not?
5. Program to find matrix of a given linear transformation.
6. Program to find the rank and nullity of a linear transformation?
7. Scilab/Maxima programs on Interpolations with equal intervals.
8. Scilab/Maxima programs on Interpolations with unequal intervals.
9. Scilab/Maxima programs to evaluate integrals using trapezoidal, Simpson's $1/3^{rd}$ rule and Simpson's $3/8^{th}$ rule.
10. Solving ordinary differential equation by modified Euler's method.
11. Solving ordinary differential equation by Runge-Kutta method of 4^{th} order.

VI SEMESTER

Paper - BSM 8: Riemann Integration, Vector Calculus and Complex Analysis

Total: 60 Hrs

Riemann Integrations: Upper and Lower sums, Refinement of partitions, upper and lower integrals, integrability, Criterion for integrability, continuous and monotonic functions are Riemann integrable, integral as the limit of a sum, integrability of the sum and product of integrable functions, integrability of the modulus of an integrable function, the fundamental theorem of calculus.

Vector Calculus: Scalar field – gradient of a scalar field, geometrical meaning – directional derivative – Maximum directional derivative – Angle between two surfaces - vector field– divergence and curl of a vector field – solenoidal and irrotational fields – scalar and vector potentials – Laplacian of a scalar field – vector identities. Standard properties,
Harmonic functions, Problems.

2hrs/week=30hrs

Complex Analysis: Complex numbers, the complex plane - conjugate and modulus of a complex number - the modulus-argument form - geometric representation - Equation to circle and line in the complex form.

Functions of a complex variable, limit, continuity and differentiability of function- Analytic function - Cauchy-Riemann equations in Cartesian form. Sufficient conditions for analytic (in Cartesian form). Real and imaginary parts of analytic functions are harmonic, construction of analytic function given real or imaginary parts.

Principal
D. V. S. College Of Arts & Science
Shimoga

VI SEMESTER

Paper - BSM 7: Vector Space and Numerical Analysis

Total: 60 Hrs

Vector Space: Vector spaces, examples, subspaces, criterion for a subset to be a subspace. Concepts of linear dependence and independence. Fundamental theorem of linear dependence. Basis and dimension, standard properties of linearly independent and dependent sets examples, illustrations, concepts and results.

Linear transformations, Matrix representation of linear maps. Rank and nullity of a linear transformation.

02hrs/week=30hrs

Numerical Analysis: Solution of algebraic and transcendental equations of one variable by Bisection, Regula-Falsi and Newton-Raphson methods.

Finite differences (Forward and Backward differences) Interpolation, Newton's forward and backward interpolation formulae. Divided Differences-Newton's divided difference formula. Lagrange's interpolation formulae.

Numerical differentiation using Newton's forward and backward interpolation formulae.

Numerical Integration-Trapezoidal rule, Simpson's one-third and three - eight rule, Weddle's rule. (without proof).

Numerical solution of ordinary differential equations of first order and first degree-Picard's method, modified Euler's method, Runge-kutta method of fourth-order (No derivations of formulae).

02hrs/week=30hrs

Reference Books:

1. Herstain: Topics in Algebra, Wiley Eastern Ltd., New Delhi.
2. Modern Algebra - Sharma and Vashishta, Krishna Prakashan Mandir, Meerut, U.P.
3. Schaum's outline of Linear Algebra - Seymour Lipschutz, McGraw Hill Education.
4. The Linear Algebra a Beginning Graduate Student Ought to Know - Golan, Jonathan S, Springer International Publishing.
5. Introductory Methods of Numerical Analysis - S.S. Sastry, Prentice Hall India Learning Private Limited.
6. Numerical Methods: For Scientific and Engineering Computation - M.K. Jain, S.R.K. Iyengar, R.K. Jain, NEW AGE; 6th edition
7. Numerical Analysis - B. D Gupta, Stosius Inc/Advent Books Division.
8. Finite Difference and Numerical Analysis - H. C Saxena, S. Chand Publishing.
9. Numerical Methods for Scientists and Engineers - B. S. Grewal, Khanna Publishers.
10. Advanced Engineering Mathematics - E. Kreyszig.

Principal
D. V. S. College Of Arts & Science
Shimoga.

02hrs/week=30hrs

Reference Books:

1. Mathematical Analysis - S. C. Malik, Savita Arora, New Age Science Ltd.
2. Principles of Mathematical Analysis - Walter Rudin, McGraw-Hill Publishing Company.
3. Real and Complex Analysis - Walter Rudin, McGraw-Hill Higher Education.
4. Elements of Real Analysis - Shanti Narayan, S. Chand & Company, New Delhi.
5. Complex Variables and Applications - James Brown, Ruel Churchill, McGraw-Hill.
6. Foundations of Complex Analysis - S. Ponnusamy, Narosa book distributors Pvt. Ltd.-New Delhi
7. Schaum's Outline of Complex Variables - Murray Spiegel, John Schiller, Seymour Lipschutz, McGraw-Hill Education.
8. Complex Analysis - Lars Ahlfors, McGraw-Hill Education.
9. Vector Calculus - Paul C. Matthews, Springer-Verlag London.
10. Golden Vector Calculus, R. Gupta, Laxmi Publications
11. A Textbook of Engineering Mathematics - N. P. Bali, N. Ch. Narayana Iyengar, Laxmi Publications.
12. Textbook of Vector Calculus - Shanti Narayan, S. Chand.

PRACTICALS - 8

Total: 30Hrs

Practicals with Free and Open Source Software (FOSS) tools for computer programs
(2 hours/ week per batch)
Softwares used: 1. Maxima
2. Scilab

LIST OF PROGRAMMES

1. Programmes to find lower and upper Riemann sum.
2. Programmes to find lower and upper Riemann integration.
3. To demonstrate the physical interpretation of gradient, divergence and curl.
4. Writing gradient, divergence, curl and Laplacian in cylindrical coordinates.
5. Writing gradient, divergence, curl and Laplacian in spherical coordinates.
6. Using cyclic notations to derive different vector identities.
7. Using cyclic notations to derive some more vector identities.
8. Programs to verify given functions satisfy Cauchy-Riemann equations both in Cartesian and polar form.
9. Implementation of Milne-Thomson method in constructing analytic functions (simple examples).
10. Illustrating orthogonality of the surfaces obtained from the real and imaginary parts of an analytic function.
11. Program to verify given function is harmonic or not.
12. Program to verify real part of an analytic function being harmonic.
13. Program to verify imaginary part of an analytic function being harmonic.

Principal
N. V. S. College Of Arts & Science

KUVEMPU UNIVERSITY

PATTERN OF THE QUESTION PAPER

FROM 1st TO 6th SEMESTER

Time:3 Hours Max.Marks:70

I	Answer any FIVE of the following (8 questions are given)	5 × 2 = 10 Marks
II	Answer any THREE of the following (05 questions are given)	3 × 5 = 15 Marks
III	Answer any THREE of the following (05 questions are given)	3 × 5 = 15 Marks
IV	Answer any THREE of the following (05 questions are given)	3 × 5 = 15 Marks
V	Answer any THREE of the following (05 questions are given)	3 × 5 = 15 Marks

PATTERN OF THE QUESTION PAPER

PAPER -BSM 1

Time:3 Hours Max.Marks:70

NOTE: **Answer All Questions**

I. Answer any **FIVE** of the following: Marks: 5 × 2 = 10

1. 2. 3. } Matrices
4. 5. } Polar Co-ordinates
6. } Successive Differentiation
7. 8. } Function of two and three variables

II. Answer any **THREE** of the following: Marks: 3 × 5 = 15

1. 2. 3. 4. 5. } Matrices

III. Answer any **THREE** of the following: Marks: 3 × 5 = 15

1. 2. 3. } Matrices
4. 5. } Polar Co-ordinates

IV. Answer any **THREE** of the following: Marks: 3 × 5 = 15

1. 2. 3. } Polar Co-ordinates
4. 5. } Successive Differentiation

Principal
D. V. S. College Of Arts & Science
Shimoga.

PAPER - BSM 3

Time:3 Hours

Max.Marks:70

NOTE: Answer All Questions

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

1.
2. } Group Theory
3.

4.
5.
6. } Ordinary Differential Equation
7.
8.

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1.
2.
3. } Group Theory
4.
5.

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1.
2.
3. } Ordinary Differential Equation (up to Exact)
4.
5.

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1.
2.
3. } Ordinary Differential Equation (after Exact up to orthogonal trajectories)
4.
5.

V. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1.
2.
3. } Ordinary Differential Equation (Higher order and simultaneous equations)
4.
5.

PAPER - BSM 4

Time:3 Hours

Max.Marks:70

NOTE: Answer All Questions

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

1.
2. } Ordinary Linear Differential Equations
3.
4.

5.
6. } Sequence and Series
7.
8.

Principal
D. V. S. College Of Arts & Science
Shimoga.

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

V. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. } Successive Differentiation
2. }
3. } Function of two and three variables
4. }
5. }

PAPER - BSM 2

Time:3 Hours Max.Marks:70

NOTE: **Answer All Questions**

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

1. } Groups
2. }
3. } Theory of plane Curves
4. } Mean value theorems
5. }
6. } L'Hospital's rule
7. } Integral Calculus
8. }

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. }
2. }
3. } Groups
4. }
5. }

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. } Theory of plane Curves
2. }
3. } Mean value Theorems
4. }
5. }

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. } Mean value Theorems
2. }
3. } L'Hospital's rule
4. }
5. }

V. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. }
2. }
3. } Integral Calculus
4. }
5. }

Principal
D. V. S. College Of Arts & Science
Shimoga.

1. } Fourier Series
2. }

3. }
4. } Rings (up to Subrings)
5. }

V. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. }
2. }
3. } Rings (From Ideals to till end)
4. }
5. }

PAPER - BSM 6

Time:3 Hours Max.Marks:70

NOTE: **Answer All Questions**

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

1. }
2. }
3. } Line and Multiple Integrals
4. }

5. }
6. } Laplace Transforms
7. }
8. }

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. } Line Integrals
2. }

3. }
4. } Double Integrals
5. }

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. } Double Integrals
2. }

3. }
4. } Triple Integrals
5. }

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. }
2. }
3. } Laplace Transforms
4. }
5. }

V. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. }
2. }
3. } Laplace Transforms
4. }
5. }

Principal
N. V. S. College Of Arts & Science
Shimoga.

1. 2. 3. 4. 5. } Ordinary Linear Differential Equations

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. 2. } Ordinary Linear Differential Equations
3. 4. 5. } Sequence of Real Numbers

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. 2. 3. } Sequence of Real Numbers
4. 5. } Infinite Series

V. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. 2. 3. } Infinite Series
4. 5. } The Integral testand Leibnitz's test

PAPER - BSM 5

Time:3 Hours Max.Marks:70

NOTE: **Answer All Questions**

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

1. 2. } Total and Simultaneous Differential Equations
3. 4. } Partial Differential Equations
5. 6. } FourierSeries
7. 8. } Rings, Integral Domains and Fields

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. 2. 3. 4. } Total and Simultaneous Differential Equations
5. } Partial Differential Equations

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1. 2. 3. } Partial Differential Equations
4. 5. } FourierSeries

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

Principal
N. V. S. College Of Arts & Science
Shimoga.

KUVEMPU UNIVERSITY

1.
2.
3. } Riemann Integrations
4.
5.

Marks: $3 \times 5 = 15$

III. Answer any **THREE** of the following:

1.
2.
3. } Vector Calculus
4.
5.

Marks: $3 \times 5 = 15$

IV. Answer any **THREE** of the following:

1.
2.
3. } Complex Analysis (up to analytic functions)
4.
5.

Marks: $3 \times 5 = 15$

V. Answer any **THREE** of the following:

1.
2.
3. } Complex Analysis (from analytic functions till
4.
5.

Principal
V.S. College Of Arts

PAPER - BSM 7

Time:3 Hours Max.Marks:70

NOTE: **Answer All Questions**

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

1.
2.
3.
4. } Vector Space

5.
6.
7.
8. } Numerical Analysis

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1.
2.
3.
4.
5. } Vector Space (up to basis and dimensions)

III. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1.
2.
3.
4.
5. } Vector Space (Linear transformation till end)

IV. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1.
2.
3.
4.
5. } Numerical Analysis (up to numerical differentiation)

V. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

1.
2.
3.
4.
5. } Numerical Analysis (numerical integration till end)

PAPER - BSM 8

Time:3 Hours Max.Marks:70

NOTE: **Answer All Questions**

I. Answer any **FIVE** of the following: Marks: $5 \times 2 = 10$

1.
2. } Riemann Integrations

3.
4. } Vector Calculus

5.
6.
7.
8. } Complex Analysis

II. Answer any **THREE** of the following: Marks: $3 \times 5 = 15$

Principal
N. V. S. College Of Arts & Science
Shimoga.

KUVEMPU UNIVERSITY

Chemistry Syllabus for B.Sc. Course – 2016

(SEMESTER SCHEME)

(w.e.f. June - 2016)

PREFACE

Science and Science education plays an important role in the development of any modern society. An effective science education can be imparted at the undergraduate level only by revamping the present curriculum and teaching to make it effective and meaningful. For this, the curriculum should be composed, giving emphasis to various aspects such as the creativity of students, awareness of basic knowledge of science, especially chemistry because chemistry is a border science to biology, physics and engineering and many other branches of science. Hence the syllabus of undergraduate courses in chemistry is prepared to give sound knowledge, understanding of chemistry. The goal of the syllabus is to make the study of chemistry stimulating, relevant and interesting. The syllabus is prepared with a view to equipping the students to contribute their knowledge and skills to academic and industrial environments and also will expose students to various fields in chemistry and in the related disciplines. The emphasis is given in the syllabus for training the students in laboratory skills and instrumentation.

This new syllabus has been prepared in a participatory manner, after discussions with a number of faculty members in the subject and also after evaluating the existing syllabi of B.Sc., the new syllabi of XI and XII standards and U.G.C. model curriculum and the syllabi of other Universities. The units of the syllabus are well defined and the scope of each is given in detail. The number of contact hours required for each unit is also given. A list of reference books is provided at the end of each unit.

OBJECTIVES

- To expose students into various fields in chemistry and to understand basic facts and concepts in Chemistry, to develop interest in the study of chemistry, and advanced aspects of related disciplines.
- To acquire the knowledge of terms, facts, concepts, techniques and principles of the subject and to develop the ability to apply skills in the proper handling of apparatus and chemicals.
- To develop problem solving skills.
- To be familiarized with the emerging areas of Chemistry their applications in various areas of Chemical sciences and empower students to meet the challenges of tomorrow.

****

Principal
D. V. S. College Of Arts & Science 2
Shimoga.

KUVEMPU UNIVERSITY

JNANA SAHYADRI, SHANKARAGHATTA,
SHIVAMOGGA DIST., INDIA, 577 451.

Chemistry Syllabus for B.Sc. Course- 2016

(SEMESTER SCHEME)

(w.e.f. June - 2016)

2016

Chemistry Syllabus for B.Sc. Course – 2016 (SEMESTER SCHEME)

(w.e.f. June - 2016)

Examination Pattern

: EXAMINATION PATTERN :

THEORY						PRACTICALS					Grand Total
Semester	Paper	Duration	Max. Marks	IA	Total	Paper	Duration	Max. Marks	IA	Total	
I	Paper-I	3 hours	50	10	60	Paper-I	3 hours	40	-	40	100
II	Paper-II	3 hours	50	10	60	Paper-II	3 hours	40	-	40	100
III	Paper-III	3 hours	50	10	60	Paper-III	3 hours	40	-	40	100
IV	Paper-IV	3 hours	50	10	60	Paper-IV	3 hours	40	-	40	100
V	Paper-V Paper-VI	3 hours 3 hours	50 50	10 10	60 60	Paper-V Paper-VI	3 hours 3 hours	40 40	-	40 40	200
VI	Paper-VII Paper-VIII	3 hours 3 hours	50 50	10 10	60 60	Paper-VII Paper-VIII	3 hours 3 hours	40 40	-	40 40	200

Theory (Final exam)	Internals	Practical	Total Marks:
400	80 (For each paper, two IA's (Tests) per semester, each carrying 20 marks and averaged to 10 marks)	320	I to VI SEMESTER 800

***

Principal
V. S. College Of Arts & Science