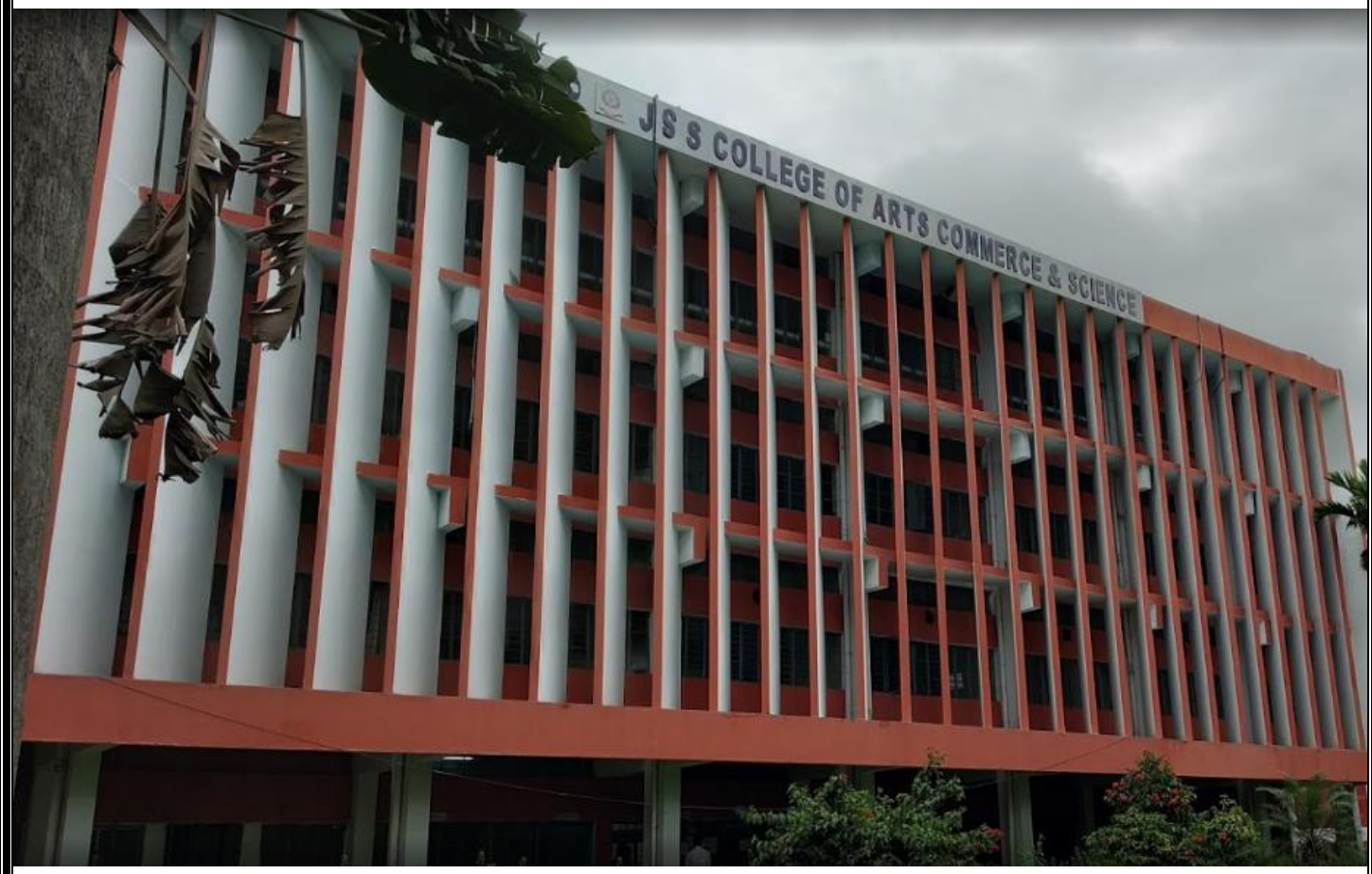
JSS MAHAVIDYAPEETHA

JSS COLLEGE OF ARTS, COMMERCE AND SCIENCE

(Autonomous, NAAC 'A' Grade and College with Potential for Excellence)

OOTY ROAD MYSORE



LIST OF CO, PO, PSO

2022-23

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UG DEPARTMENTS	PG DEPARTMENTS
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Environmental Studies	Biotechnology
Physics	Biochemistry
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Mathematics	MCA
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Biotechnology	
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Zoology	
Microbiology	
Food processing &	
Animation	
Software development	

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: **Hindi**
Programmes offered : BA **FHA 040 (FHA-31 to 35)**

List of COs, POs, and PSOs (For the year 2022-23):

PO/PSO Id/No.	PO/PSO
04031-35 PO1	Understand culture and heritage
04031-35 PO1	Manage business affairs
04031-35 PO1	Create interest in literature
04031-35 PO1	Report and edit public events effectively
04031-35 PO1	Develop reading writing communication and reasoning skills

Course title	Course Code	CO No./Id	CO Statement
Hindi Kahani sahetya Aur Vyakarna Paper 1	**FHA 040**	CO 1	**1** . Identify in details with examples kahani of 20th century
		CO 2	**2.** Write down in depth kahani of 20th century
		CO 3	**3**. Deliberate in depth kahani of 20th century
		CO 4	**4**. Specify the classification and characteristics of Hindi vykaran
		CO 5	**5.** Identify the characteristics of Hindi vykaran

Course title	Course Code	CO No./Id	CO Statement
Hindi Lagu upanyasa Aur prayojan mulak Hindi Paper 2	**FHB 040**	CO 1	**1**.Learn in details with examples Novel- by kamaleshwra
		CO 2	**2**Understand in details with examples Novel-by kamaleshwra
		CO 3	**3**.Understand the details of Novel-by kamaleshwra
		CO 4	**4**. Identify the classification and

			characteristics of Prayojan Mulak Hindi
		CO 5	**5.** Identify the characteristics of Hindi vykaran

Course title	Course Code	CO No./Id	CO Statement
Hindi Nibandha Sangraha Aur Anuvada Kala Paper 3	**FHC 040**	CO 1	**1**. Learn in details with examples Nibandha - by Vithi- Sampa
		CO 2	**2.** Understand in details with examples Nibandha - by Vithi- Sampa
		CO 3	**3**. Understand the details of Nibandha - by Vithi- Sampa
		CO 4	**4**. Identify the classification and characteristics of Anuvad Kala
		CO 5	**5.** Write down the characteristics ofAnuvad Kala

Course title	Course Code	CO No./Id	CO Statement
Hindi Khanda-kavya Tatha Patra-Lekhan Aur Alekan Paper 4	**FHD 040**	CO 1	**1**.Learn in details with examples Hindi Khanda Kavya
		CO 2	**2.**Understand in details with examples Khanda Kavya Ekalavya
		CO 3	**3**.Understand the details of Ekalavya
		CO 4	**4**. Identify the classification and characteristics of Patra
		CO 5	**5.** Write down the characteristics of Patra

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: **Hindi**
Programmes offered : BSC **FSA 040 (FSA – 31 to 43)**

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/PSO Id/No.	PO/PSO
04031-43 PO1	Inculcate human values
04031-43PO1	Avail job opportunities in translation
04031-43 PO1	Create interest in literature

Course title	Course Code	CO No./Id	CO Statement
Hindi Kahani sahetya Aur Vyakarna Paper 1	**FSA 040**	CO 1	**1** . Identify in details with examples kahani of 20th century
		CO 2	**2.** Write down in depth kahani of 20th century
		CO 3	**3**. Deliberate in depth kahani of 20th century
		CO 4	**4**. Specify the classification and characteristics of Hindi vykaran
		CO 5	**5.** Identify the characteristics of Hindi vykaran

Course title	Course Code	CO No./Id	CO Statement
Hindi Lagu upanyasa Aur prayojan mulak Hindi Paper2	**FSB 040**	CO 1	**1**.Learn in details with examples Novel- by kamaleshwra
		CO 2	**2**Understand in details with examples Novel-by kamaleshwra
		CO 3	**3**.Understand the details of Novel-by kamaleshwra
		CO 4	**4**. Identify the classification and characteristics of Prayojan Mulak Hindi

		CO 5	**5.** Write down the characteristics ofPrayojan Mulak Hindi

Course title	Course Code	CO No./Id	CO Statement
Hindi Nibandha Sangraha Aur Anuvada Kala Paper 3	**FSC 040**	CO 1	**1**. Learn in details with examples Nibandha - by Vithi- Sampa
		CO 2	**2.** Understand in details with examples Nibandha - by Vithi- Sampa
		CO 3	**3**. Understand the details of Nibandha - by Vithi- Sampa
		CO 4	**4**. Identify the classification and characteristics of Anuvad Kala
		CO 5	**5.** Write down the characteristics ofAnuvad Kala

Course title	Course Code	CO No./Id	CO Statement
Hindi Khanda-kavya Tatha Patra-Lekhan Aur Alekan Paper 4	**FSD 040**	CO 1	**1**.Learn in details with examples Hindi Khanda Kavya
		CO 2	**2.**Understand in details with examples Khanda Kavya Ekalavya
		CO 3	**3**.Understand the details of Ekalavya
		CO 4	**4**. Identify the classification and characteristics of Patra
		CO 5	**5.** Write down the characteristics of Patra

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: **Hindi**

Programmes offered : **: BCOM - FCA 040 11**

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/PSO Id/No.	PO/PSO
04011 PO1	Inculcate human values
040 11PO 2	Avail job opportunities in translation
040 11 PO3	Create interest in literature

Course title	Course Code	CO No./Id	CO Statement
Gadya ki vidhiya aur Vyakarna **Paper 1**	**FCA 04011**	CO 1	**1**.Deliberate in details with application, if applicable, short stores of 20th century
		CO 2	**2**. Deliberate in details with application, if applicable, gadya by manoja guptha
		CO 3	**3**. Understand the classification and characteristics of gadya by manoja guptha
		CO 4	**4**. Understand in details with application, if applicable, Hindi vyakaran
		CO 5	**5.** Learn the details of Hindi vyakaran
		CO 6	**6.** Specify in details with application, if applicable, Hindi vyakaran

Course title	Course Code	CO No./Id	CO Statement
Hindi Kahani Sangrah aur Midiya lekan Paper 2	**FCB 040 11**	CO 1	**1** . Specify in details with application, if applicable, Midiya lekan
		CO 2	**2** . Understand the details of kahani of 20th cenyury
		CO 3	**3** . Learn in details with application, if applicable, kahani of 20th cenyury
		CO 4	**4** . Identify the classification and

			characteristics of Midiya lekan
		CO 5	**5.** Deliberate the details of Hindi vyakaran
		CO 6	**6.** Understand in details with application, if applicable, Midiya lekan

Course title	Course Code	CO No./Id	CO Statement
Hindi KavitaSangra Our SarkariPatrachar, ParibhashikShabdawali Paper 3	**FCC 040 11**	CO 1	**1.** Deliberate the classification and characteristics of modern Hindi kavya
		CO 2	**2** . Deliberate the characteristics of modern Hindi kavya
		CO 3	**3** . Understand the details modern Hindi kavya
		CO 4	**4** .Understand in details with application, if applicable, Hindi Sarkari Patrachar
		CO 5	**5**. Learn the details of Hindi Paribhashik Shabdawali
		CO 6	**6.** Specify in details with application, if applicable, Hindi Sarkari Patrachar

Course title	Course Code	CO No./Id	CO Statement
Hindi NatakTathaComputer aur Hindi Paper 4	**FCD 04011**	CO 1	**1.** Deliberate the classification and characteristics of HindiNatak
		CO 2	**2** . Deliberate the characteristics of HindiNatak
		CO 3	**3** . Understand the details HindiNatak
		CO 4	**4** .Understand in details with application, if applicable, Computer aur Hindi
		CO 5	**5.** Learn the details of Computer aur Hindi
		CO 6	**6.** Specify in details with application, if applicable, Computer aur Hindi

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: **Hindi**

Programmes offered : **: BBA - FBA 040 11**

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/PSO Id/No.	PO/PSO
04011 PO1	Motivated for their higher education
040 11PO 2	Write resume, letter of application and business letters
040 11 PO3	Improve Spoken and written communication

Course title	Course Code	CO No./Id	CO Statement
Gadya ki vidhiya aur Vyakarna **Paper 1**	**FBA 04011**	CO 1	**1**.Deliberate in details with application, if applicable, short stores of 20th century
		CO 2	**2**. Deliberate in details with application, if applicable, gadya by manoja guptha
		CO 3	**3**. Understand the classification and characteristics of gadya by manoja guptha
		CO 4	**4**. Understand in details with application, if applicable, Hindi vyakaran
		CO 5	**5.** Learn the details of Hindi vyakaran
		CO 6	**6.** Specify in details with application, if applicable, Hindi vyakaran

Course title	Course Code	CO No./Id	CO Statement
Hindi Kahani Sangrah aur Midiya lekan Paper 2	**FBB 040 11**	CO 1	**1** . Specify in details with application, if applicable, Midiya lekan
		CO 2	**2** . Understand the details of kahani of 20th cenyury
		CO 3	**3** . Learn in details with application, if applicable, kahani of 20th cenyury
		CO 4	**4** . Identify the classification and

			characteristics of Midiya lekan
		CO 5	**5.** Deliberate the details of Hindi vyakaran
		CO 6	**6.** Understand in details with application, if applicable, Midiya lekan

Course title	Course Code	CO No./Id	CO Statement
Hindi KavitaSangra Our SarkariPatrachar, ParibhashikShabdawali Paper 3	**FBC 040 11**	CO 1	**1.** Deliberate the classification and characteristics of modern Hindi kavya
		CO 2	**2** . Deliberate the characteristics of modern Hindi kavya
		CO 3	**3** . Understand the details modern Hindi kavya
		CO 4	**4** .Understand in details with application, if applicable, Hindi Sarkari Patrachar
		CO 5	**5**. Learn the details of Hindi Paribhashik Shabdawali
		CO 6	**6.** Specify in details with application, if applicable, Hindi Sarkari Patrachar

Course title	Course Code	CO No./Id	CO Statement
Hindi NatakTathaComputer aur Hindi Paper 4	**FBD 04011**	CO 1	**1.** Deliberate the classification and characteristics of HindiNatak
		CO 2	**2** . Deliberate the characteristics of HindiNatak
		CO 3	**3** . Understand the details HindiNatak
		CO 4	**4** .Understand in details with application, if applicable, Computer aur Hindi
		CO 5	**5.** Learn the details of Computer aur Hindi
		CO 6	**6.** Specify in details with application, if applicable, Computer aur Hindi

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: **Hindi**

Programmes offered : **: BCA - FAA 040 11**

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/PSO Id/No.	PO/PSO
04011 PO1	Motivated for their higher education
040 11PO 2	Write resume, letter of application and business letters
040 11 PO3	Improve Spoken and written communication

Course title	Course Code	CO No./Id	CO Statement
Gadya ki vidhiya aur Vyakarna **Paper 1**	**FCA 04011**	CO 1	**1**.Deliberate in details with application, if applicable, short stores of 20th century
		CO 2	**2**. Deliberate in details with application, if applicable, gadya by manoja guptha
		CO 3	**3**. Understand the classification and characteristics of gadya by manoja guptha
		CO 4	**4**. Understand in details with application, if applicable, Hindi vyakaran
		CO 5	**5.** Learn the details of Hindi vyakaran
		CO 6	**6.** Specify in details with application, if applicable, Hindi vyakaran

Course title	Course Code	CO No./Id	CO Statement
Hindi Kahani Sangrah aur Midiya lekan Paper 2	**FCB 040 11**	CO 1	**1** . Specify in details with application, if applicable, Midiya lekan
		CO 2	**2** . Understand the details of kahani of 20th cenyury
		CO 3	**3** . Learn in details with application, if applicable, kahani of 20th cenyury
		CO 4	**4** . Identify the classification and

			characteristics of Midiya lekan
		CO 5	**5.** Deliberate the details of Hindi vyakaran
		CO 6	**6.** Understand in details with application, if applicable, Midiya lekan

Course title	Course Code	CO No./Id	CO Statement
Hindi KavitaSangra Our SarkariPatrachar, ParibhashikShabdawali Paper 3	**FCC 040 11**	CO 1	**1.** Deliberate the classification and characteristics of modern Hindi kavya
		CO 2	**2** . Deliberate the characteristics of modern Hindi kavya
		CO 3	**3** . Understand the details modern Hindi kavya
		CO 4	**4** .Understand in details with application, if applicable, Hindi Sarkari Patrachar
		CO 5	**5**. Learn the details of Hindi Paribhashik Shabdawali
		CO 6	**6.** Specify in details with application, if applicable, Hindi Sarkari Patrachar

Course title	Course Code	CO No./Id	CO Statement
Hindi NatakTathaComputer aur Hindi Paper 4	**FCD 04011**	CO 1	**1.** Deliberate the classification and characteristics of HindiNatak
		CO 2	**2** . Deliberate the characteristics of HindiNatak
		CO 3	**3** . Understand the details HindiNatak
		CO 4	**4** .Understand in details with application, if applicable, Computer aur Hindi
		CO 5	**5.** Learn the details of Computer aur Hindi
		CO 6	**6.** Specify in details with application, if applicable, Computer aur Hindi

JSS Mahavidyapeetha
JSS College of Arts, Commerce and Science (Autonomous)
Ooty Road, Mysuru - 570025

2022-23

Department: Electronics **Programme: BSc Physcis, Maths,Electronics**
Programme Code: BSc 04

Course title	CO ID	CO
Digital Signal Processing	DME260041	To identify the details of discrete/digital signals and systems
Digital Signal Processing	DME260042	To Understand the classification and characteristics of frequency domain analysis of discrete time signals.
Digital Signal Processing	DME260043	To specify with examples DSP filters
Electrical circuits and Network skills	DME264041	To design and trouble shoot the electrical circuits and networks
Electrical circuits and Network skills	DME264042	To carry-out simple domestic wiring.
Verilog and VHDL	DMF260041	To identify the details of Digital logic design flow
Verilog and VHDL	DMF260042	To learn the characteristics and model the digital circuits using VHDL behavioural modelling
Verilog and VHDL	DMF260043	To deliberate in detail the dataflow and structural modelling in VHDL
Verilog and VHDL	DMF260044	To describe digital circuits utilizing various constructs of Verilog

PO ID	PO
PO1	Demonstrate proficiency in Mathematics and the Mathematical concepts needed for a proper understanding of Physics
PO2	Demonstrate the ability to justify and explain their thinking and/or approach.
PO3	Develop state-of-the-art laboratory and professional communication skills.
PO4	Apply the scientific method to design, execute, and analyze an experiment
PO5	Explain scientific procedures and their experimental observations
PO6	Understand the value of Mathematical proof.
PO7	Demonstrate proficiency in writing and understanding proofs.

PO8	Apply mathematical problems and solutions in aspects of science and technology.
PO9	Gain experience to investigate the real world problems
PO10	Apply mathematical ideas and models to problems.
PO11	Apply appropriate troubleshooting techniques to electronic circuits / systems and perform test procedures.
PO12	Assist, Assemble, modify and test electronic circuits in accordance with job requirements

JSS Mahavidyapeetha
JSS College of Arts, Commerce and Science (Autonomous)
Ooty Road, Mysuru - 570025

2022-23

Department: Electronics **Programme: BSc Physcis, Electronics**

Programme Code: BSc PhEl33

Course title	CO ID	CO
Programming in C and digital design using Verilog	FSC440331	To familiarize with the different constructs of Verilog HDL
Programming in C and digital design using Verilog	FSC440332	To understand Verilog tasks and directives
Programming in C and digital design using Verilog	FSC440333	To impart the concepts of Verilog HDL, Data flow and behavioral models for the design of digital systems.
Programming in C and digital design using Verilog	FSC440334	To learn C language features and realize its importance with Verilog HDL
Electronic Communication – I	FSD440331	To understand principle and working of communication system.
Electronic Communication – I	FSD440332	To understand the principle and working of different modulation and demodulation techniques
Electronic Communication – I	FSD440333	To understand the Principle and working of Antenna, Waveguides, Transmission lines and RADAR
Electronic Communication – I	FSD440334	To understand the basics of Satellite and Optical Fiber communication

PO ID	PO
PO1	Acquire the knowledge of Basic and Advanced topics related to the field of Electronics
PO2	Apply the knowledge of Logic thinking and basic Science for solving Electronics related problems.
PO3	Ability to perform Electronics Experiments and analyse and interpret data.
PO4	Ability to design and manage Electronic Systems or Processes that conforms to a given specification within ethical and economic constraints.
PO5	Ability to identify, formulate, solve and analyse the problems in various sub disciplines of Electronics.
PO6	Ability to use Modern Tools/Techniques in solving problems in the field of Electronics.

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: MICROBIOLOGY
Programmes offered: B.Sc

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO Id/No.	PO
PO1	Knowledge and understanding of concepts of microbiology and its application in pharma, food, agriculture, beverages, nutraceutical industries.
PO2	Understand the distribution, morphology and physiology of microorganisms and demonstrate the skills in aseptic handling of microbes including isolation, identification and maintenance.
PO3	Competent to apply the knowledge gained for conserving the environment and resolving the environmental related issues.
PO4	Learning and practicing professional skills in handling microbes and contaminants in laboratories and production sectors.
PO5	Exploring the microbial world and analysing the specific benefits and challenges.
PO6	Applying the knowledge acquired to undertake studies and identify specific remedial measures for the challenges in health, agriculture, and food sectors.
PO7	Thorough knowledge and application of good laboratory and good manufacturing practices in microbial quality control.
PO8	Understanding biochemical and physiological aspects of microbes and developing broader perspective to identify innovative solutions for present and future challenges posed by microbes.
PO9	Understanding and application of microbial principles in forensic and working knowledge about clinical microbiology.
PO10	Demonstrate the ability to identify ethical issues related to recombinant DNA technology, GMOs, intellectual property rights, biosafety and biohazards.
PO11	Demonstrate the ability to identify key questions in microbiological research, optimize research methods, and analyse outcomes by adopting scientific methods, thereby improving the employability.
PO12	Enhance and demonstrate analytical skills and apply basic computational and statistical techniques in the field of microbiology

Course title	Course Code	CO No./Id	CO Statement
I year, I Semester : General Microbiology	**FSA500**	**FSA500411**	Thorough knowledge and understanding of concepts of microbiology.
		FSA500412	Learning and practicing professional skills in handling microbes.
		FSA500413	Thorough knowledge and application of good laboratory and good manufacturing practices in microbial quality control.
II Semester: Microbial Biochemistry and Physiology	**FSB500**	**FSB500411**	Inculcate the knowledge regarding microbial growth, functions, physiology and metabolism
		FSB500412	Know the microbial growth in response to environmental factors
		FSB500413	Get equipped with various methods of bacterial growth measurement
II year , III Semester: Microbial Diversity	**FSC500**	**FSC500411**	Knowledge about microbes and their diversity.
		FSC500412	Knowledge about viruses and their diversity
		FSC500413	Study, characters, classification and economic importance of Pro-eukaryotic andEukaryotic microbes.
II year, IV Semester: Microbial Enzymology and Metabolism	**FSD500**	**FSD500411**	Differentiating concepts of chemo heterotrophic metabolism and chemo lithotrophic metabolism.
		FSD500412	Describing the enzyme kinetics, enzyme activity and regulation
		FSD500413	Differentiating concepts of aerobic and anaerobic respiration and how these are manifested in the form of different metabolic pathways in microorganisms
III year ,V Semester: Environmental Microbiolgy	**DME280**	**DME280061**	Know the role of microorganisms in soil, air, water, waste water and bioremediation
		DME280062	Learn the occurrence, abundance and distribution of microorganisms in the environment and their role in the environment
		DME280063	Understand various biogeochemical cycles – Carbon, Nitrogen, Phosphorus cycles etc. and microbes involved in these cycles
		DME280064	Understand various plant microbes interactions and their applications.
		DME280065	Understand the basic principles of bioremediation
		DME280066	The various methods to determine the Sanitary quality of water and sewage treatment methods employed in waste water treatment

		DME280067	The various methods to determine the sanitary quality of water and sewage treatment methods employed in waste water treatment
VI Semester: Industrial, Food & Medical Microbiology	**DMF280**	**DMF280061**	Understand food related microorganisms, their contamination, spoilage and preservation
		DMF280062	Understand the beneficial role of microorganisms in fermented dairy products
		DMF280063	Understand how microbiology is applied in manufacture of industrial products
		DMF280064	The underlying principles in downstream processing
		DMF280065	Know the human immune response towards microbes, Know the relationship between microorganism and human disease, pathogenicity, Laboratory diagnosis, treatment and prophylaxis
		DMF280066	Demonstrate an understanding of key concepts in immunology
VI Semester(SEC): Microbial Diagnosis in Health Clinics	**DMF282**	**DMF282061**	Gain experience in health clinics such as examination, collection of clinical samples and diagnosis
		DMF282062	Demonstrate scientific quantitative skills, the ability to evaluate experimental design, read graphs
		DMF282063	Understand and use information from scientific papers/Journals

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JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the **Department: BIOTECHNOLOGY** Programmes offered**:B.Sc.,**

Programme Code: BScBtZ30/ BScChBt37/ BScBtBc40/ BScMbBt41

PO ID	PO
PO1	Would be able to comprehend the structure of a cell with its organelles
PO2	Can distinguish between the Structure of prokaryotic and eukaryotic cell.
P03	Can explain the organization of genes and chromosomes, chromosome morphology and its aberrations
P04	Thorough knowledge andunderstandingofconceptsofmicrobiology
P05	Learning and practicingprofessional skills in handlingmicrobes
P06	Willbeabletodemonstratetheskillstoperformbioanalyticaltechniques
PO7	Apply comprehensive innovations and skills ofbiomoleculestobiotechnologyfield
P08	Studytheadvancementsinmolecularbiologywithlatesttrends
P09	Willacquiretheknowledgeofstructure,functionalrelationshipofproteins andnucleicacids
P010	Awareaboutthebasiccellularprocessessuchas transcription,translation,DNAreplicationandrepairmechanisms

Course title	Course Code	CO ID	CO
Cell biology and genetics	FSA460	FSA460301/ FSA460371/ FSA460401/ FSA460411	Would be able to comprehend the structure of a cell with its organelles
Cell biology and genetics	FSA460	FSA460302/ FSA460372/ FSA460402/ FSA460412	Can explain the organization of genes and chromosome, its morphology and its aberrations
Microbial methods and techniques	FSB460	FSB460301/ FSB460371/ FSB460401/ FSB460411	Thorough knowledge and understanding of concepts of microbiology.
Microbial methods and techniques	FSB460	FSB460302/FSB460372/ FSB460402/ FSB460412	Learning and practicing professional skills in handling microbes
Microbial methods and techniques	FSB460	FSB460303/ FSB460373/ FSB460403/ FSB460413	Thorough knowledge and application of good laboratory and good manufacturing practices in microbial quality control.
Biomolecules	FSC460	FSC460301/ FSC460371/ FSC460401/ FSC460411	Acquireknowledgeabouttypesofbiomolecules, structure,andtheirfunctions
Biomolecules	FSC460	FSC460302/ FSC460372/ FSC460401/ FSC460412	Willbeabletodemonstratetheskillstoperformbioanalytic altechniques
Biomolecules	FSC460	FSC460301/ FSC460373/ FSC460403/ FSC460413	Applycomprehensiveinnovationsandskillsofbiomolecul estobiotechnologyfield

Molecular biology	FSD460	FSD460301/ FSD460371/ FSD460401/ FSD460411	Studytheadvancementsinmolecular biologywithlatesttrends.
Molecular biology	FSD460	FSD460302/FSD460372/ FSD460402/FSD460412	Willacquiretheknowledgeofstructure,functionalrelationshipofproteinsandnucleicacids.
Molecular biology	FSD460	FSD460303/ FSD460373/ FSD460403/ FSD460413	Awareaboutthebasiccellularprocessessuchastranscription,translation,DNAreplicationandrepairmechanisms.

CBCS Syllabus

BSc in Biochemistry, Microbiology, Biotechnology

POID	PO
PO1	Apply the scientific method to design, execute, and analyze an experiment
PO2	Develop state-of-the-art laboratory and professional communication skills
P03	Explain scientific procedures and their experimental observations
P04	Improve Communication and Skill enhanced activities
P05	Avail job opportunities in translation
P06	Understand and analyze the Socio-cultural aspects of society.

BSc in Chemistry, Zoology, Biotechnology

POID	PO
PO1	Demonstrate the ability to justify and explain their thinking and/or approach, both written and oral forms.
PO2	Explain why chemistry is an integral activity for addressing social, economic, and environmental problems
P03	Identify the major groups of organisms with an emphasis on animals/plants
P04	Apply the scientific method to design, execute, and analyze an experiment

Department: BIOTECHNOLOGY **Programme:B.Sc.,**

Programme Code: BScCZBt05/BSc BMBt06

Course title	**CO ID**	**CO**
Immunology and medical biotechnology	DME220051/ DME220061	Understand the role of different types of Cells in immune system.
Immunology and medical biotechnology	DME220052/DME 220062	Discuss the principles and applications of immunological techniques.
Immunology and medical biotechnology	DME220053/DME 220063	Understand to diagnose diseases
Immunology and medical biotechnology	DME220054/DME 220064	Comprehendtheknowledgeoftherapeutic applicationsofenzyme andhormone.
EnvironmentalBiotechnologyand Biostatistics	DMF220051/DMF 220061	Gainanunderstandingofthecauses,typesandcontrolmethodsforEnvironmental Pollution.
EnvironmentalBiotechnologyand Biostatistics	DMF220052/DMF 220062	DifferentiatetheapplicationofdifferentlifeformsinEnvironmentalRemediation.
EnvironmentalBiotechnologyand Biostatistics	DMF220053/DMF 220063	ApplyStatisticalToolsforAnalysisofBiologicalData.

JSS MAHAVIDYAPEETHA

JSS COLLEGE OF ARTS,COMMERCE AND SCIENCE,OOTY ROAD, MYSURU

Name of the department : CHEMISTRY

Programmes offered :PCM,CBZ,CZBt (CBCS)

List of COs/POs and PSOs (For the year 2022-23) PS

Course Title	PO/PSO id No	PO/PSO
Inorganic materials of industrial importance.	PO2	Demonstrate the ability to justify and explain their thinking and/or approach.
	PO3	Demonstrate the ability to think, express and present in a clear, logical and succinct arguments.
	PO4	Develop state- of the -art laboratory skills and professional communication skills .

Course Title	Course code	CO no/id	CO statement
Inorganic materials of industrial importance.	DME 240	CO1	Understand the synthesis and applications of glass and ceramics, vitamins, hormones, soaps and detergents and higher aspects of spectroscopy.
		CO2	Understand the types and manufacture of different fertilizers.
		CO3	Understand the different methods of prevention of corrosion.

Course Title	PO/PSO id No	PO/PSO
Organometallics ,bioinorganic chemistry, polynuclear hydrocarbons and UV, IR spectroscopy	PO2	Demonstrate the ability to justify and explain their thinking and/ or approach.
	PO2	Demonstrate the ability to justify and explain their thinking and /or approach
	PO3	Demonstrate the ability to think ,express and present in a clear, logical and succinct arguments.

Course Title	Course code	CO no/id	CO statement
Organometallics ,bioinorganic chemistry, polynuclear hydrocarbons and UV, IR spectroscopy	DMF 240	CO1	Understand the techniques involved in metallurgy.
		CO2	Understand the role of ions in different biological systems.
		CO3	Understand the applications of spectroscopy.

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Course Title	PO/PSO id No	PO/PSO
Inorganic materials of industrial importance.	PO2	Demonstrate the ability to justify and explain their thinking and/or approach.
	PO3	Demonstrate the ability to think, express and present in a clear, logical and succinct arguments.
	PO4	Develop state- of the -art laboratory skills and professional communication skills .

Course Title	Course code	CO no/id	CO statement
Inorganic materials of industrial importance.	DME 240	CO1	Understand the synthesis and applications of glass and ceramics, vitamins, hormones, soaps and detergents and higher aspects of spectroscopy.
		CO2	Understand the types and manufacture of different fertilizers.
		CO3	Understand the different methods of prevention of corrosion.

Course Title	PO/PSO id No	PO/PSO
Organometallics ,bioinorganic chemistry, polynuclear hydrocarbons and UV, IR spectroscopy	PO2	Demonstrate the ability to justify and explain their thinking and/ or approach.
	PO2	Demonstrate the ability to justify and explain their thinking and /or approach
	PO3	Demonstrate the ability to think ,express and present in a clear, logical and succinct arguments.

Course Title	Course code	CO no/id	CO statement
Organometallics ,bioinorganic chemistry, polynuclear hydrocarbons and UV, IR spectroscopy	DMF 240	CO1	Understand the techniques involved in metallurgy.
		CO2	Understand the role of ions in different biological systems.
		CO3	Understand the applications of spectroscopy.

Name of the department : CHEMISTRY
Programmes offered : PC,CB,CZ,CBt (NEP)

List of COs/POs and PSOs (2022-23)

Course Title	PO ID No	PO
Chemistry I	PO1	To create enthusiasm among students for chemistry and its application in various fields oflife
	PO2	To provide students with broad and balanced knowledge and understanding of key concepts in chemistry
	PO3	To develop in students a range of practical skills so that they can understand and assess risks and work safely measures to be followed in the laboratory.
	PO4	To develop in students the ability to apply standard methodology to the solution of problems in chemistry
	PO5	To provide students with knowledge and skill towards employment or higher education in Analytical chemistry or multi-disciplinary areas involving chemistry
	PO6	To provide students with the ability to plan and carryout experiments independently and assess the significance of outcomes and to cater to the demands of chemical Industries of well-trained graduates
	PO7	To develop in students the ability to adapt and apply methodology to the solution of unfamiliar types of problems.
	PO8	To instill critical awareness of advances at the forefront of chemical sciences, to prepare students effectively for professional employment or research degrees in chemical sciences and to develop an independent and responsible workethics.

Course Title	Course code	CO no/id	CO statement
Chemistry I	FSA420	CO1	The concepts of chemical analysis, accuracy, precision and statistical data treatment
		CO2	Understand basic concept of organic reaction mechanism, types of organic reactions.
		CO3	Explain the existence of different states of matter in terms of balance between intermolecular forces and thermal energy of the particles. Explain the laws governing behavior of ideal gases and real gases. Understand cooling effect of gas on adiabatic xpansion
		CO4	To understand the concept Quantum mechanics. Derivation of Schrodinger's wave equation. Radial and Angular Orbital shapes of s, p, d and f atomic orbitals, nodal planes. Electronic Configurations of the atoms.
		CO5	Understand the properties of liquids in terms of intermolecular attractions

Course Title	PO ID No	PO
Chemistry II	PO1	To create enthusiasm among students for chemistry and its application in various fields of life
	PO2	To provide students with broad and balanced knowledge and understanding of key concepts in chemistry
	PO3	To develop in students a range of practical skills so that they can understand and assess risks and work safely measures to be followed in the laboratory.
	PO4	To develop in students the ability to apply standard methodology to the solution of problems in chemistry
	PO5	To provide students with knowledge and skill towards employment or higher education in Analytical chemistry or multi-disciplinary areas involving chemistry.
	PO6	To provide students with the ability to plan and carryout experiments independently and assess the significance of outcomes and to cater to the demands of chemical Industries of well-trained graduates
	PO7	To develop in students the ability to adapt and apply

		methodology to the solution of unfamiliar types of problems.
	PO8	To instill critical awareness of advances at the forefront of chemical sciences, to prepare students effectively for professional employment or research degrees in chemical sciences and to develop an independent and responsible workethics.

Course Title	Course code	CO no/id	CO statement
Chemistry II	FSB420	CO 1	Understand principles of titrimetricanalysis
		CO2	Understand titration curves, indicators for precipitation titrations involving silver nitrate- Volhard's and Mohr's methods and their differences.
		CO3	Understand periodic table, classification and properties of s p d and f block elements
		CO4	Understand nucleophilic substitution at saturated carbon, energy profile diagram stereochemistry and factors affecting S_{N1} and SN_2 reactions .
		CO5	Understand the different forms of solids, laws of crystallography , miller indices and its calculation, X-ray diffraction studies. Brags law and its equation

Course Title	PO ID No	PO
Chemistry III	PO4	To provide students with knowledge and skill towards employment or higher education in analytical chemistry multi-disciplinary areas involving chemistry.
	PO3	To develop in students the ability to apply standard methodology to the solution of problems in chemistry.
	PO5	To develop in students the ability to adopt and apply methodology to the solution of unfamiliar types of problems.
	PO2	To provide students with broad and balanced knowledge and understanding of key concepts in chemistry.
	PO1	To create enthusiasm among students for chemistry and its application in various fields of life.

Course Title	Course code	CO no/id	CO statement
Chemistry III	FSC420	CO1	Apply solvent extraction method for quantitative determination of metal ions in different samples.
		CO2	Utilize the ion exchange chromatography for domestic and industrial applications.
		CO3	Write born-Haber cycle for different ionic compounds.
		CO4	Explain mechanism for a given reaction.
		CO5	Understand the concept of rate of a chemical reaction integrated rate equations, energy of activation and determination of order of a reaction based on experimental data

Course Title	PO id/No	PO
Chemistry IV	PO4	To provide students with knowledge and skill towards employment or higher education in analytical chemistry multi-disciplinary areas involving chemistry.
	PO5	To develop in students the ability to apply standard methodology to the solution of problems in chemistry.
	PO3	To develop in students the ability to adopt and apply methodology to the solution of unfamiliar types of problems.
	PO2	To provide students with broad and balanced knowledge and understanding of key concepts in chemistry.
	PO1	To create enthusiasm among students for chemistry and its application in various fields of life.

Course Title	Course code	CO no/id	CO statement
Chemistry IV	FSC420	CO1	Know how different analytes in different matrices can be determined by spectrophotometric, nephelometric and turbidimetric methods.
		CO2	Write the M.O energy diagrams for simple molecules.
		CO3	Differentiate bonding in metals from their compounds.
		CO4	Explain the importance of stereochemistry in predicting the structures and property of organic molecules.
		CO5	Learn importance laws of thermodynamics and their applications to various thermodynamics system.

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: UG DEPARTMENT OF ENGLISH
Programmes offered: B A

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/PSO Id/No.	PO/PSO
PSO1	Cultivate language skills at a perceivable level for effective communication and employability.
PSO2	Acquire knowledge of British, American, Commonwealth and other new literatures across the ages.
PSO3	Discern appropriate strategies of textual interpretation of different literary genres.
PSO4	Acquire higher order thinking skills.
PSO5	Be aware of the causes and effects of social, political, and cultural ideologies through literature.
PSO6	Acquire a sense of social commitment.
PSO7	Shape their personality traits with moral and ethical behavior.
PSO8	Transfer academic accomplishment into life skills.
PSO9	Gain knowledge on a par with regional, national, and global needs.
PSO10	Face the challenges of the competitive world and choose the right career for themselves.

NEP PAPERS

Course title	Course Code	CO No./Id	CO Statement
Introduction to Literature	FHA510	CO1	Acquire knowledge of Indian writing
		CO2	Interpret ideas of the past and contemporary writers
		CO3	Understand the impact of Indian writers
		CO4	Express history through prose and poetry
		CO5	Illustrate the literary background

Course title	Course Code	CO No./Id	CO Statement
Indian Writing in English-Part I	FHA520	CO1	Acquire knowledge of Indian writing
		CO2	Interpret ideas of the past and contemporary writers
		CO3	Understand the impact of Indian writers
		CO4	Express history through prose and poetry
		CO5	Illustrate the literary background

Course title	Course Code	CO No./Id	CO Statement
Introduction to Phonetics and Linguistics	FHB510	CO1	Define and explain different literary terms and forms
		CO2	Acquire knowledge of the genres of literature
		CO3	Apply the basic stylistics of literary texts in original writings
		CO4	Study the English Language scientifically.
		CO5	Understand the different patterns and sound system of the language.
		CO6	Use effectively the accurate pronunciation of English.

Course title	Course Code	CO No./Id	CO Statement
Indian Writing in English (Part 2)	FHB520	CO1	Acquire knowledge of Indian writing
		CO2	Interpret ideas of the past and contemporary writers
		CO3	Understand the impact of Indian writers
		CO4	Express history through prose and poetry
		CO5	Illustrate the literary background

Course title	Course Code	CO No./Id	CO Statement
British Literature up to 1800 From Chaucer to the Age of Transition	FHC510	CO1	Acquire knowledge about the social, historical and political background of Chaucer and Elizabethan Age.
		CO2	Analyse and apply these background information in interpreting and understanding a literary text.
		CO3	The Leaner will identify the different themes and characteristic of Chaucer and Elizabethan Age.
		CO4	Enhance their inventive skills by understanding the different proportions of British Literature
		CO5	Scrutinize and apply knowledge in sensible circumstances

Course title	Course Code	CO No./Id	CO Statement
Indian Literature in Translation	FHC520	CO1	Analyze the importance of translation of literary works in a cross-cultural country like India.
		CO2	Familiarize themselves with the form, the style and thematic concern of 20th Century Indian Literature, and assess the emergence of modernity in Indian Literature.
		CO3	Identify the relevance of modernity in Indian social fabric and the approach to class and gendering Modern Indian Writing

Course title	Course Code	CO No./Id	CO Statement
British Literature - 19th And 20th Century (Part 2)	FHD510	CO1	Gain knowledge and have clear idea about Victorian Age and its literature
		CO2	Develop the aesthetic sense to comprehend and critically appreciate.
		CO3	Trace the Major Issues and analyze the unique features of literature of Victorian Age.
		CO4	Evaluate the merits of Victorian literature and cultivate creative fervour.
		CO5	Enhance Critical and analytical skills to evaluate the artistic merits of literary art of Victorian Age.

Course title	Course Code	CO No./Id	CO Statement
Gender Studies	FHD520	CO1	Identify the problems of women.
		CO2	Demonstrate the essentiality of women in society.
		CO3	Survey the gender issues and the links between male female relationships.
		CO4	Validate the transformed attitude towards women in society.
		CO5	Approach women's issues logically and find viable solutions to their problems to better society with gender equity

CBCS PAPERS

Course title	Course Code	CO No./Id	CO Statement
Modern Literature	ELE22224, 225	CO1	. Have better understanding of life.
		CO2	Develop analytical and critical quality.
		CO3	Be creative in his day to day life and face the problems
		CO4	Relation between literature and real life.
		CO5	Compare and contrast the historical and modern works

Course title	Course Code	CO No./Id	CO Statement
English Writing in Third World Countries	ELF22224, 225	CO1	Understand the problems the of third world countries
		CO2	Know the rift between colonised and coloniser
		CO3	Understand the spirit of independence and limitations of freedom.
		CO4	Get the knowledge of pre and post independent socio-political and economic aspects of India.
		CO5	Develop critical and rational thinking.
		CO6	Understand the diversity and similarity in socio-cultural aspects of the third world countries.

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: **Journalism**
Programmes offered: **BA JP**

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/PSO Id/No.	PO/PSO
BAJP451	The programme aims to churn out responsible media professionals who would contribute positively to the society.
BAJP452	The programme aims to facilitate better career opportunities for all those students of this course and get them to tackle challenges in the professional setup.
BAJP453	The programme aims to strike a balance between the dynamic working environment and professional ethics in the field of journalism and mass communication.
BA251	Acquire a functional knowledge of the underlying principles and recent emerging trends of the media industry.
BA252	Create a design emerging audio media production.
BA253	Conceptualize, create, design and strategies high-quality media content for various digital platforms.
BA254	Appreciate and demonstrate the ability to produce reliable outcome.
BA255	Demonstrate critical reading, writing and thinking skills.
BA256	Locate, evaluate, organize and incorporate information effectively.
BA257	Develop and carry out research project.
BA258	Demonstrate competence in Standard English Language and usage in documentation.

Course title	Course Code	CO No./Id	CO Statement
Introduction to Journalism	FHA530	FHA5301	To identify the distinct nature of journalism and its professional aspects, including career opportunities.
		FHA5302	To familiarize and use terms specific to Media.
		FHA5303	To acquaint the students about the historical perspective of Indian journalism.
		FHA5304	To upgrade the students with the current practices.
Computer Application For Media	FHB530	FHB5301	Students will be equipped with computer related media skills.
		FHB5302	Students will get hands on experience on various computer applications.

		FHB5303	Students will independently be able to create new media content.
News Reporting and Analysis	FHC530	FHC5301	To identify events and issues and turn them into news.
		FHC5302	To make use of the skills and techniques in reporting.
		FHC5303	Explore career opportunities in reporting.
News Processing and Editing	FHD530	FHD5301	To understand editing and publication process.
		FHD5302	To write and edit news stories.
		FHD5303	To design newspaper/ magazine pages.
Media Gender and Human Rights (GE)	DLE27615	DLE276151	Become as Social Activist
		DLE276152	Appear for Competitive Examination
		DLE276153	Know the Media Impact on the communities
		DLE276154	Gain Knowledge on Media Culture.

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science (Autonomous)

Ooty Road, Mysuru - 570025

List of COs, POs, and PSOs 2022-23

Department: KANNADA (UG) **Programme: B.A (DSC) NEP**

Programme Code: BAKG43

Course title	CO ID	CO
PRACHINA KANNADA SAHITYA CHARITRE	FHA 490	1. Salient features of old kannada literature 2. Importance of inscription Literature (Halmidi , Badami) 3. Intoducing the Works of Classical poets (Pampa,Ranna Nagachandra) 4. First prose work ' vaddaaradhane'
MADHYA KALINA KANNADA SAHITYA CHARITRE	FHA 500	1.Characterstics of medival kannada literature 2. importance of vachanas & vachanakara's 3. Features of keerthana (Purandaradasa,Kanakadasa) 4.Intoducing the Works of medival kannada poets (Kumaravyasa , Harihara Ragahvanka)
ADHUNIKA POORVA KANNADA SAHITYA CHARITRE	FHB490	1.Characterstics of early modern kannada literature 2. Contibutions of shishunala sharifa , Muddana, 3. Contibutions of Helavana katte Giriyamma, kadakola Madivalappa 4. works of Muddana,Kempu Narayana,Basavappashastri
ADHUNIKA KANNADA SAHITYA CHARITRE	FHB500	1.Influence of English literature on Kannada literature 2. Characterstics of different literary movements 3. Salient features of modern kannada literature 4. Intoducing the Works of modern kannada poets (B.M. Shri ,Kuvempu ,Bendre , Pu.Ti.Na, Maasti)
BHARATIYA MATTU PASHCHATYA KAVYA MEEMAMSE	FHC490	1.Origen & development of Indian Poetics 2.Definitions of 'Kavya'& its use 3. Definition of Alankara, Dhvani ,Rasa 4. Theory of Imitation,catharsis, I.A.Richards &T.S.Eliot
KANNADA KAVYA MEEMAMSE-ADHUNIKA ROOPAGALU	FHC500	1.Different Theories of modern kannada poetics 2.Features of dalith poetics 3.Importance of feminist theory of poetics 4. Poetics in the view of Kuvempu,pu.ti.na. & Adiga
SAMSHODHANE MATTU VIMARSHE	FHD490	1.Knowledge of research methodolagy 2. Qualities of a researcher 3. Characterstics of & criticism 4. Qualities of a critic
JAANAPADA HAGU MAHILA SAHITYA	FHD500	1. Features & importance of folk literature. 2. Bifercations in folk literature 3. Introdution of folk Epics(Maleya madeshwara,Manteswamy) 4.Introduction of feminist writers of modern kannada literature (kodagina govramma, vaidehi ,sara abubakkar,

Programme Code: BA 23 **Programme: B.A (DSE) CBCS**

Course title	CO ID	CO
KANNADA JANPADA SAHITYA ADHYAYANA	ELE258 (DSE)	1. Features ,importance of folk literature & Culture 2. Bifercations in folk literature 3. Introdution of folk Epics(Maleya madeshwara,Manteswamy) 4. Types of folk literature with examples
KANNADA SAHITYA PARICHAYA	ELE259 (GE)	1.Brief knowledge of kannada litrtature & its tradition 2. Introduction of Kannada great poets,vachanakaras & keerthanakaras.
VISHESHA KAVI -KAVYA ADHYAYANA (PAMPA)	ELF252 (DSE)	1.PAMPA as Adikavi & his history 2. Introduction of his poetries ,its sources & study of Characters 3.Content & Form of his Poetries 4.Importance of Pampa's Style & Originalities
KANNADA KALIKE-GALIKE	ELE258 (GE)	1.Introduction of Short Stories & Modern Poems 2. Origen of words, kannada grammer & types of sentences

PO ID	PO
BAKG43 1.	GET THE LITERARY AWARENESS , ADOPT SCIENTIFIC & RATIONAL THINKING.
BAKG43 2.	GAIN THE KNOWLEDGE OF CLASSICAL,MEDIVEL & MODERN KANNADA LITERATURE
BAKG43 3.	GAIN LANGUAGE SKILLS IN READING & WRITING
BAKG43 4.	GAIN KNOWLEDGE OF CONTEMPORARY PREVAILINGS
BAKG43 5.	AWARENESS OF SOCIO-RELIGIOUS ,POLITICAL & GEOGRAPHICAL BACKGROUND OF KANNADA
BAKG43 6.	KNOWLEDGE OF CULTURAL RICHNESS OF KANNADA LANGUAGE & LITERATURE
BAKG43 7.	BECOME A CREATIVE WRITER BY STUDYING KANNADA LITERATURE

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: MATHEMATICS
Programmes offered: B.Sc (NEP)S

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/PSO Id/No.	PO/PSO
PO1	**Disciplinary Knowledge:** Bachelor degree in Mathematics is the culmination of in-depth knowledge of Algebra, Calculus, Geometry, differential equations and several other branches of pure and applied Mathematics. This also leads to study the related areas such as computer science and other allied subjects
PO2	**Communication Skills**: Ability to communicate various mathematical concepts effectively using examples and their geometrical visualization. The skills and knowledge gained in this program will lead to the proficiency in analytical reasoning which can be used for modeling and solving of real life problems.
PO3	**Critical Thinking and Analytical Reasoning:** The students undergoing this programme acquire ability of critical thinking and logical reasoning and capability of recognizing and distinguishing the various aspects of real life problems.
PO4	**Problem Solving:** The Mathematical knowledge gained by the students through this programme develop an ability to analyze the problems, identify and define appropriate computing requirements for its solutions. This programme enhances students overall development and also equip them with mathematical modeling ability, problem solving skills.

Course title	Course Code	CO No./Id	CO Statement
Algebra-I and Calculus-I	FSA43032/ FSA43034	CO1	Learn to solve system of linear equations.
		CO2	Solve the system of homogeneous and non homogeneous linear of *m* equations in *n* variables by using concept of rank of matrix.
		CO3	Students will be familiar with the techniques of integration and differentiation of function with real variables.
		CO4	Students learn to solve polynomial equations.
		CO5	Learn to apply Reduction formulae.

Algebra-II and Calculus-II	FSB43032/ FSB43034	CO1	Learn the concept of Divisibility.
		CO2	Learn about prime and composite numbers.
		CO3	Learn the concept of congruences and its applications
		CO4	Identify and apply the intermediate value theorems and L'Hospital rule.
		CO5	Understand the concept of differentiation and fundamental theorems in differentiation and various rules.
		CO6	Find the extreme values of functions of two variables.
		CO7	Students learn to find areas and volumes using integration.
Algebra-III and Differential equations-I	FSC43032/ FSC43034	CO1	Enhance learning in Algebra and Differential Equations.
		CO2	Apply the concepts of algebra in practical problems
		CO3	Solve various differential equations of practical interest.
Real analysis -I and Differential equations-II	FSD43032/ FSD43034	CO1	Enhance learning in Analysis and Differential Equations.
		CO2	Apply the concepts of analysis in practical problems
		CO3	Solve various differential equations of practical interest

Name of the Department: MATHEMATICS

Programmes offered: B.Sc (CBCS)

PO/PSO Id/No.	**PO/PSO**
PO1	Demonstrate proficiency in Mathematics and the Mathematical conceptsneeded for a proper understanding of Physics.
PO2	Demonstrate the ability to justify and explain their thinking and/or approach
PO3	Demonstrate the ability to think , express and present in a clear, logical and succinct arguements
PO4	Develop state – of – the –art laboratory skills and professional communication skills
PO5	Use this has a basis for ethical behavior in issues facing chemist/drugs

Course title	**Course Code**	**CO No./Id**	**CO Statement**

Linear Algebra	DME27001/ DME27002/ DME27003/ DME27004	CO1	Understand the concept of vector space
		CO2	Understand Euclidian geometry with the help of real inner products.
		CO3	Understand the orthogonal projection
		CO4	Distinguish between linear and non- linear transformations
		CO5	Understand the importance of Matrices in the study of linear transformations..
Complex Analysis	DMF27001/ DMF27002/ DMF27003/ DMF27004	CO1	Understand the importance of complex numbers and their geometrical representation
		CO2	Find the equations of geometrical figures in complex form
		CO3	Distinguish between differentiability and analyticity of a function.
		CO4	Study the properties of various transformations.
		CO5	Understand the importance of conformal mappings.
Vector calculus	DMF27401/ DMF27402/ DMF27403/ DMF27404	CO1	Understand the concepts of differentiation and partial differentiation of a vector function.
		CO2	*Study the properties of vectors*

Name of the Department: MATHEMATICS
Programmes offered: BCA (NEP)

PO/PSO Id/No.	PO/PSO
PO1	**Discipline knowledge**: Acquiring knowledge on basics of computer science and ability to apply to design principles in the development of solutions for problems of varing complexity
PO2	**Problem solving**: Improved reasoning with strong Mathematical ability to identify, formulate and analyze problems related to computer science and exhibiting a sound knowledge on data structures and algarithms
PO3	**Design and development of solutions**: Ability to design anf development of algorithmic solutions to real world problems and acquiring a minimum knowledge on statistics and optimization problems. Establishing excellent skills in applying various design stargies for solving complex problems.

Course title	Course Code	CO No./Id	CO Statement

Mathematical foundation	FAA430	CO1	Study and solve problems related to connectives , predicates and quantifiers under different situations
		CO2	*Develop basic knowledge of matrices and to solve equations using cramer's rules*
		CO3	Know the concept of eigen values
		CO4	To develop the knowledge about derivatives and know various applications of differentiation
		CO5	Understand the basic concepts Mathematical reasoning , set and functions
Discrete Mathematical structures	FAB430	CO1	To understand the basic concept of Mathematical reasoning, set and function
		CO2	*To understand various counting techniques and principle of inclusion and exclusions*
		CO3	Understand the concepts of various types of relations, partial ordering and equivalence relation
		CO4	Apply the concepts of generating functions to solve the recurrencs relations
		C05	Familiarise the fundamental concepts of graph theory and shortest path algarithm

Name of the Department: MATHEMATICS
Programmes offered: BCA (CBCS)

PO/PSO Id/No.	**PO/PSO**
PO1	Get expected skills to be placed in Is sector and self-employment
PO2	To develop abilities for data analysis and interpretation using ICT
PO3	Acquire comprehensive knowledge with equal emphasis on theory and practice

Course title	**Course Code**	**CO No./Id**	**CO Statement**
Business Mathematics	ECE30201	CO1	Specify the characteristic of Matrices and determinants
		CO2	*Write down in details with examples* Matrices and determinants
		CO3	Deliberate the characteristics of algebra
		CO4	Learn the classification and characteristic of permutation and combination
		CO5	Deliberate in details with examples Mathematical induction

Name of the Department: MATHEMATICS

Programmes offered: BBA (NEP)

PO/PSO Id/No.	PO/PSO
PO1	**Disciplinary Knowledge:** Bachelor degree in Mathematics is the culmination of in-depth knowledge of Algebra, Calculus, Geometry, differential equations and several other branches of pure and applied Mathematics. This also leads to study the related areas such as computer science and other allied subjects
PO2	**Communication Skills**: Ability to communicate various mathematical concepts effectively using examples and their geometrical visualization. The skills and knowledge gained in this program will lead to the proficiency in analytical reasoning which can be used for modeling and solving of real life problems.
PO3	**Critical Thinking and Analytical Reasoning:** The students undergoing this programme acquire ability of critical thinking and logical reasoning and capability of recognizing and distinguishing the various aspects of real life problems.
PO4	**Problem Solving:** The Mathematical knowledge gained by the students through this programme develop an ability to analyze the problems, identify and define appropriate computing requirements for its solutions. This programme enhances students overall development and also equip them with mathematical modeling ability, problem solving skills.

Course title	Course Code	CO No./Id	CO Statement
Business Mathematics-I	FSA850	CO1	Translate the real word problems through appropriate mathematical modelling
		CO2	Explain the concepts and use equations, formulae and mathematical expression and relationship in a variety of context
		CO3	Finding the extreme values of functions
		CO4	Analyze and demonstrate the mathematical skill require in mathematically intensive areas in economics and business
Business Mathematics-II	FSB850	CO1	Integrate concept in international business concept with functioning of global trade.
		CO2	Evaluate the legal, social and economic environment of business.
		CO3	Apply decision-support tools to business decision making
		CO4	Will be able to apply knowledge of business concepts and functions in an integrated manner.
Mathematical Aptitude-III	FSC840	CO1	Have a strong base in the fundamental mathematical concepts.
		CO2	Grasp the approaches and strategies to solve

			problems with speed and accuracy
		CO3	Gain appropriate skills to succeed in preliminary selection process for recruitment

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Ooty Road, Mysuru – 570 025, Karnataka, India

List of COs, POs, and PSOs 2022-23

Name of the Department: Physics

Programmes offered: NEP: PC,PCs,PM,PE CBCS: PCM,PME,PMCs,

PO/PSO Id/No.	PO/PSO
I SEM,II SEM & III SEM(NEP)	
PO1	Discipline Knowledge: Knowledge of science and ability to apply to relevant areas.
PO2	Problem solving: Execute a solution process using first principles of science to solve problems related to respective discipline.
PO3	Modern tool usage: Use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
PO4	Ethics: Apply the professional ethics and norms in respective discipline.
PO5	Individual and teamwork: Work effectively as an individual as a team member in a multidisciplinary team.
PO1	Discipline Knowledge: Knowledge of science and ability to apply to relevant areas.
IV SEM(NEP)	
PO1	Disciplinary Knowledge
PO2	Communication Skills Critical thinking, Reflective thinking, Analytical reasoning, Scientific reasoning
PO3	Critical thinking, Reflective thinking, Analytical reasoning, Scientific reasoning Problem-solving
PO4	Problem-solving
PO5	Research-related skills
V SEM(DSE) (CBCS)	
PO1	Demonstrate proficiency in mathematics and the mathematical concepts needed for a proper understanding of physics
PO2	Demonstrate the ability to justify and explain their thinking and/or approach
PO3	Develop state of the art laboratory and professional communication skills
PO4	Apply the scientific method to design, execute and analyse an experiment
V SEM(SEC)	
PO1	Demonstrate proficiency in mathematics and the mathematical concepts needed for a proper understanding of physics
PO2	Demonstrate the ability to justify and explain their thinking and/or approach
PO3	Apply the scientific method to design, execute and analyse an experiment
VI SEM	
PO1	Demonstrate proficiency in mathematics and the mathematical concepts needed for a proper understanding of physics
PO2	Demonstrate the ability to justify and explain their thinking and/or approach
PO3	Develop state of the art laboratory and professional communication skills
PO4	Apply the scientific method to design, execute and analyse an experiment

Course title	Course Code	CO No./Id	CO Statement
I SEM Mechanics and Propertis of matter	FSA41031	FSA41031	Willlearnfixingunits,tabulationofobservations,analysisofdata (graphical/analytical)
	FSA41032	FSA41032	Will learn about accuracy of measurement and sources oferrors,importance of significantfigures.
	FSA41033	FSA41033	Will know how g can be determined experimentally andderivesatisfaction.
	FSA41034	FSA41034	Willseethedifferencebetweensimpleandtorsionalpendulum and their use in the determination of variousphysicalparameters.
	FSA41035	FSA41035	Will come to know how various elastic moduli can bedetermined.
II SEM Electricity and Magnetisam	FSB41031	FSB41031	Demonstrate Gauss law, Coulomb's law for the electricfield, and apply it to systems of point charges as well asline,surface,andvolumedistributionsof charges.
	FSB41032	FSB41032	Explainanddifferentiatethevector(electricfields,Coulomb'slaw) andscalar(electricpotential,electricpotentialenergy)formalisms ofelectrostatics.
	FSB41033	FSB41033	ApplyGauss'slawofelectrostaticstosolveavarietyofproblems.
	FSB41034	FSB41034	Describethemagneticfieldproducedbymagneticdipolesandelect ric currents.
	FSB41035	FSB41035	ExplainFaraday-LenzandMaxwelllawstoarticulate therelationshipbetweenelectricandmagneticfields.
III SEM Wave Motion and Optics	FSC41031	FSC41031	Identify different types of waves by looking into their characteristics.
	FSC41032	FSC41032	Formulate a wave equation and obtain the expression for different parameters associated with waves.
	FSC41033	FSC41033	Explain and give a mathematical treatment of the superposition of waves underdifferentconditionssuchaswhen theyoverlaplinearlyandperpendicularly withequalordifferentfrequenciesand equal or different phases
	FSC41034	FSC41034	Describetheformationofstandingwaves and how the energy is transferred along the standing wave in different applications, and mathematically model inthecaseofstretchedstringand Vibrationofarod.
	FSC41035	FSC41035	Give an analytical treatment of resonanceinthecaseofopenandclosed pipesin general and Helmholtz Resonatorsinparticular.
IV SEM Thermal Physics and Electronics	FSD41031	FSD41031	Applythe laws of thermodynamics and analyze the thermal system.
	FSD41032	FSD41032	Apply the laws of kinetic theory and radiation laws to the ideal and practical thermodynamics systems through derived thermodynamic relations.
	FSD41033	FSD41033	Use the concepts of semiconductors to describe different Semiconductor deviceslikediodetransistors,BJT,FET etc and explain their functioning.
	FSD41034	FSD41034	Explain the functioning of OP-AMPS and them as the

			building blocks of logic gates.
	FSD41035	FSD41035	Givetheuseoflogicgatesusing differenttheoremsof Boolean Algebra followed by logic circuits
V SEM (DSE) Solid state physics	DME29201	DME29201	Write down in detail with application of crystal structure
	DME29202	DME29202	Write down the details of elementary lattice dynamics
	DME29203	DME29203	Deliberate in detail with examples magnetic properties of matter
	DME29204	DME29204	Identify the characteristics of elementary band theory
V SEM(SEC) Renewable Energy	DME29601	DME29601	Understand the characteristics of fossil fuel
	DME29602	DME29602	Learn in detail with application of wind energy
	DME29603	DME29603	Specify in detail with application of ocean energy and hydro energy
VI SEM Nuclear and particle physics	DMF29201	DMF29201	Write down in detail with application and properties of nuclei
	DMF29202	DMF29202	Learn in detail with application and nuclear models
	DMF29203	DMF29203	Understand in detail with examples radioactivity
	DMF29204	DMF29204	Identify the details of particle accelerators

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: Commerce and Management
Programmes offered: B.Com and BBA

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/PSO Id/No.	PO/PSO
B.Com: **This program could provide well trained dynamic personnel and professionals for;**	
P01	Industries and Multinational companies
P02	Banking Sectors and Insurance Companies
P03	Financing and Leasing Companies
P04	Transport Agencies and Warehousing
P05	Stock Markets and Foreign Trade
BBA: **This program could provide well trained professionals to practice and work as;**	
P01	Chartered accountants, advocates, cost accountants and company secretaries
P02	Financial Analysts, Tax consultants, Tax Practitioners and Investment consultants
P03	Financial and management accountants
PO4:	Human Resource Manager and Counsellor
P05	Administrator of the different types of Business and Non-business organizations.

Course title	Course Code	CO No./Id	Course Outcomes
Financial Accounting	FCA 410	C01	**On successful completion of the course, the Students will be able to** Understand the theoretical framework of accounting as well accounting standards.
		C02	Demonstrate the preparation of financial statement of manufacturing and nonmanufacturing entities of sole proprietors.
		C03	Exercise the accounting treatments for consignment transactions & events in the books of consignor and consignee.
		C04	Understand the accounting treatment for royalty transactions & articulate the Royalty agreements.
		C05	Outline the emerging trends in the field of

			accounting
Management Principles and Applications	FCA420	C01	**On successful completion of the course, the Students will be able to** Understand and identify the different theories of organisations, which are relevant in the present context.
		C02	Design and demonstrate the strategic plan for the attainment of organisational goals.
		C03	Differentiate the different types of authority and chose the best one in the present context.
		C04	Compare and chose the different types of motivation factors and leadership styles.
		C05	Choose the best controlling techniques for better productivity of an organisation
Principles of Marketing	FCA430	C01	**On successful completion of the course, the Students will be able to** Understand the basic concepts of marketing and asses the marketing environment.
		C02	Analyse the consumer behaviour in the present scenario and marketing segmentation.
		C03	Discover the new product development & identify the factors affecting the price of a product in the present context.
		C04	Judge the impact of promotional techniques on the customers & importance of channels of distribution.
		C05	Outline the recent developments in the field of marketing

Financial Accounting-II	FCB410	C01	**On successful completion of the course, the Students will be able to** Understand & compute the amount of claims for loss of stock & loss of Profit.
		C02	Learn various methods of accounting for hire purchase transactions.
		C03	Deal with the inter-departmental transfers and their accounting treatment.
		C04	Demonstrate various accounting treatments for dependent & independent branches.
		C05	Prepare financial statements from incomplete records.
Company Law	FCB420	C01	The students will understand the frame work of Companies Act of 2013.
		C02	Identify the stages of formation and documents involved in the formation of a company.
		C03	Role of Managerial Personnel and procedure of conducting company meetings.
		C04	The students will understand the procedure for formation of company.
		C05	The students will understand the concept of liquidation of company
Law and Practice of Banking	FCB430	C01	Students will understand the conceptual frame work of Banking, classification of Banking.
		C02	Students will understand the banker and customer relationship
		C03	Students will understand the E-Banking services.
		C04	Enable the student to understand banking regulations Act.
		C05	Enable the student to understand the function of RBI
Corporate Accounting	FCC410	C01	Understand the treatment of underwriting of shares.
		C02	Comprehend the computation of profit

			prior to incorporation.
		C03	Know the valuation of intangible assets
		C04	Know the valuation of shares.
		C05	Prepare the financial statements of companies as per companies act, 2013.
Business Statistics	FCC420	C01	Familiarizes statistical data and descriptive statistics for business decision-making.
		C02	Comprehend the measures of variation and measures of skewness.
		C03	Demonstrate the use of probability and probability distributions in business.
		C04	Validate the application of correlation and regression in business decisions
		C05	Show the use of index numbers in business.
Cost Accounting	FCC430	C01	Understand concepts of cost accounting & Methods of Costing.
		C02	Outline theProcedure and documentations involved in procurement of materials& compute the valuation of Inventory.
		C03	Make use of payroll procedures & compute idle and over time.
		C04	Discuss the methods of allocation, apportionment & absorption of overheads.
		C05	Prepare cost sheet & discuss cost allocation under ABC.

Open Elective

Advertising Skills	FCC810	C01	Enable students to get familiarised with advertising concepts
		C02	Enable students learn to develop advertising skills
		C03	Enable students understand the communication process
		C04	Enable students to understand Advertising Agency
		C05	Enable students to understand Measuring Advertising Effectiveness

Entrepreneurship Skills	FCC820	C01	Enable students get familiarised with entrepreneurship to build their career asentrepreneurs
		C02	Create awareness in students about various promotional schemes for entrepreneurshipdevelopment
		C03	Create awareness about schemes promoting entrepreneurs
		C04	Create awareness about Ways to set up an enterprise
		C05	Create awareness about Business Plan Preparation and Project Financing
Advanced Corporate Accounting	FCD410	C01	Know the procedure of redemption of preference shares.
		C02	Comprehend the different methods of Mergers and Acquisition of Companies
		C03	Understand the process of internal reconstruction
		C04	Prepare the liquidators final statement of accounts.
		C05	Understand the recent developments in accounting and accounting standards.
Costing Methods and Techniques	FCD420	C01	The method of costing applicable in different industries..
		C02	Determination of cost by applying different methods of costing.
		C03	Prepare flexible and cash budget with imaginary figures
		C04	Analyse the processes involved in standard costing
		C05	Familiarize with the Activity Based Costing and its applications
Business Regulatory Framework	FCD430	C01	Recognize the laws relating to Contracts and its application in business activities.
		C02	Acquire knowledge on bailment and indemnification of goods in a contractualrelationship and role of agents.

		C03	Comprehend the rules for Sale of Goods and rights and duties of a buyerandaseller
		C04	Distinguish the partnership laws, its applicability and relevance.
		C05	Rephrase the cyber law in the present context.
ENTREPRENEURSHIP DEVELOPMENT	ENE210	C01	Understand in depth the required characteristics and procedure to become an young entrepreneur scheme to small business
		C02	Specify in details with application, if applicable, easily access different financial
		C03	Identify in detail with examples to easily different financial schemes offered by Banks and Government Agencies
		C04	Understand in depth and identify the social responsibility of an entrepreneur towards different sectors
		C05	Learn in depth the Self employment opportunities
IFRS (IND - AS)	ENE220	C01	CO1: Deliberate the characteristics of IFRS
		C02	CO2: Understand in depth frame work for the preparation and presentation of financial statement
		C01	Learn in details with examples Accounting for assets and liabilities
		C02	Learn in details with examples IND AS on business combination
		C03	Understand the details of IND AS in relation to accounting for Revenue and Expenses
BUSINESS RESEARCH METHODS	ENE260	C04	Learn in depth different methods of research, methodology, data collection, analysis and interpretation of data to become a

			good business researcher
		C05	Understand and able to report about various issues of different organisations through research report
		C01	Understand the details of types of Business Research and Research design
		C02	Identify and contribute to the discipline of commerce and management through the research
		C03	Deliberate the details of Data analysis
CONSUMER AFFAIRS	ENE280	C04	Learn conceptual frame work of consumer and consumer market
		C05	Understand in depth the characteristics of consumer protection law in India
		C01	Deliberate the details of role played by the advisory bodies at different level
		C02	Indentify the grievance redressal mechanism
		C03	Specify the details of role played by industry regulator in consumer protection
GOODS AND SERVICES TAX-I	ENE300	C04	Understand the technology and flow of return filing under GST
		C01	Learn in details and gain knowledge to practice as GST Consultant
		C02	Learn in details provisions of GST to handle TDS and POS online and off line more efficiently
		C03	Understand in depth tax provisions to make managerial decisions effectively in various tax related matters
		C04	Understand the provisions of integrated goods and service Tax Act, 2017
FINANCIAL MANAGEMENT-I	ENE310	C05	Identify the details of various sources of finance

		C01	Learn the characteristics of different methods of time value of money and its application to investment decision
		C02	Learn the classification and characteristics of cost of capital
		C03	Identify the characteristics of capital structure and factors affecting the capital structure
		C04	Learn the details of Capital Budgeting
ADVANCED COST AND MANAGEMENT ACCOUNTING-I	ENE320	C05	Learn in depth various Costing methods
		C01	Understand the details of contract costing and process costing
		C02	Identify reasons for reconciliation of cost and financial accounts
		C03	Learn in depth the details of Activity based costing
		C04	prepare the operating cost sheet
PRINCIPLES AND PRACTICE OF AUDITING	ENF210	C05	Learn in depth to practice as an Auditor
		C01	Learn the characteristics of errors and frauds and minimize them in maintenance of books of accounts
		C01	Identify in detail the importance of Internal Control and Internal Check
		C02	Identify the details of audit planning
		C03	Learn in depth verification and valuation of Assets and Liabilities
		C04	Deliberate in details with examples audit of different types of organizations
BUSINESS LAWS	ENF220	C05	Understand in details various laws related to business and able to work as legal adviser of business enterprises
		C01	Understand the characteristics of legal environment and practice business ethics

		C02	Learn in depth and apply the basic legal knowledge to business enterprises
		C03	Understand the characteristics of different intellectual properties and protect them
		C04	Identify and appointed as member of various commerce and legal boards / committee
		C05	Specify the details of Information technologies Act
		C01	Learn the provisions of Special Contract
GOODS AND SERVICES TAX AND CUSTOM DUTY-II	ENF300	C02	Understand the technology and flow of return filing under GST
		C03	Learn in details and gain knowledge to practice as GST Consultant
		C04	Learn in details provisions of GST in relation to value of taxable supply and input tax credit
		C05	Understand in depth tax provisions to make managerial decisions effectively in various tax related matters
		C01	Learn in detail the procedure to be followed to assess the value and determine customs duty
		C02	Understand the procedure of registration under GST
		C03	Prepare tax invoice, credit and debit notes
FINANCIAL MANAGEMENT –II	ENF310	C04	Deliberate the details of working capital management
		C05	Learn in depth the details of cash management
		C01	Understand the details of working capital financing
		C02	Deliberate in details with examples

			Venture capital financing
		C03	Learn in depth the details of shareholders value creation
		C04	Deliberate in depth International financial management
ADVANCED COST AND MANAGEMENT ACCOUNTING-II	ENF320	C01	Understand the details of management accounting
		C02	Learn in depth the details of financial statement analysis techniques
		C03	Analyze the inflow and outflow of cash and able to prepare cash flow statement
		C04	Understand the characteristics of different types of ratios
		C05	Learn in depth budget and budgetary control and prepare various budget for different activities of the business
ORGANISATIONAL BEHAVIOUR	ENF330	C01	Understand in detail behaviour of employees and able to manage them efficiently
		C02	Identify in details employees performance and able to motivate for effective performance
		C03	Learn in depth and analyse the behaviour of employees
		C04	Understand in details key positions in an organisation and able to occupy them
		C05	Learn in details with examples frame policies and strategies in organisation

BBA

Management Principles & Practice	FBA410	P01	**On successful completion of the course, the Students will demonstrate** The ability to understand concepts of business management, principles and function of management.
		P02	The ability to explain the process of planning and decision making.
		P03	The ability to create organization structures based on authority, task and responsibilities.
		P04	The ability to explain the principles of direction, importance of communication, barrier of communication, motivation theories and leadership styles.
		P05	The ability to understand the requirement of good control system and control techniques.
Fundamentals of Business Accounting	FBA420	P01	Understand the framework of accounting as well accounting standards.
		P02	The Ability to pass journal entries and prepare ledger accounts
		P03	The Ability to prepare subsidiaries books
		P04	The Ability to prepare trial balance and final accounts of proprietary concern.
		P05	Construct final accounts through application of tally.
Marketing Management	FBA430	P01	Understand the concepts and functions of marketing.
		P02	Analyse marketing environment impacting the business.
		P03	Segment the market and understand the consumer behaviour

		P03	Enable students learn to media decision
		P04	The ability to prepare and evaluate vertical and horizontal analysis of financial statements
		P05	The ability to understand company's annual reports
Human Resource Management	FBB420	P01	Ability to describe the role and responsibility of Human resources management functions on business
		P02	Ability to describe HRP, Recruitment and Selection process
		P03	Ability to describe to induction, training, and compensation aspects.
		P04	Ability to explain performance appraisal and its process.
		P05	Ability to demonstrate Employee Engagement and Psychological Contract.
Business Environment	FBB430	P01	An Understanding of components of business environment.
		P02	Ability to analyse the environmental factors influencing business organisation.
		P03	Ability to demonstrate Competitive structure analysis for select industry
		P04	Ability to explain the impact of fiscal policy and monetary policy on business.
		P05	Ability to analyse the impact of economic environmental factors on business.
Financial Accounting and Reporting	FBB410	P01	The ability to prepare final accounts of partnership firms
		P02	The ability to understand the process of public issue of shares and accounting for the same
		P03	The ability to prepare final accounts of joint stock companies.
		P04	The ability to prepare and evaluate vertical and horizontal analysis of financialstatements
		P05	The ability to understand company's annual reports.
Cost Accounting	FBC410	P01	Understand the elements of costing and

			preparation of cost sheet
		P02	The ability to prepare material requisitions and management of store.
		P03	The ability to compare and contrast labour cost techniques.
		P04	Ability to differentiate kinds of overhead costing.
		P05	Ability to reconcile the cost.
Organizational behaviour	FBC420	P01	To recall role of OB in business organization.
		P02	Able to understand group dynamics in an organization.
		P03	Able to understand the change management
		P04	Able to construct the process of organizational development
		P05	Ability to understand the kinds of Interventions in OB.
Statistics for Business Decisions	FBC430	P01	To understand the requirements of statistical framework
		P02	To construct and visualize the data.
		P03	To determine the data adequacy for analysis.
		P04	To Review the data by using various tools.
		P05	To understand and analyze the impact of probability
Management accounting	FBD410	P01	Able to understand the concept of Management Accounting.
		P02	To Understand and recall ratios and apply the same on given case.
		P03	To construct cash flow statement
		P04	Should be able to apply Marginal cost rations to make business decisions.
		P05	Student should be able to analyze business problems through applicatio ns.
Financial Markets & Services	FBD420	P01	To able to recall concepts of financial system.
		P02	Able to differentiate the roles of financial institutions.
		P03	Able understand concept of financial services.
		P04	To understand the trading process of Instruments.
		P05	Able to Summarize the concept of stock market
Financial management	FBD430	P01	To identify the goals of financial management.

		P02	To appraise the concepts of time value of money.
		P03	To understand the different models of dividend policy.
		P04	Able to analyze the business problem related to investments.
		P05	Able to appraise the working capital requirements in an organization.
ENTREPRENEURSHIP DEVELOPMENT	CDF21001	P01	Learn in depth qualities of an entrepreneur and able to become an entrepreneur
		P02	Write down the details of financial schemes offered by banks and government agenciesand able to access them easily
		P03	Learn the details of mobilization of resources
		P04	Learn in depth the characteristics of customer and able to identify the customer
BUSINESS STATISTICS - II	CDF22001	P01	Understand in depth the components of time series analysis and measurement of trend
		P02	Learn in detail the features of linear programming and apply to solve business problem
		P03	Understand the statistical decision making process under certainty and uncertainty
		P04	Learn in detail the theories of probability
		P05	Understand in depth the properties of theoretical distributions and their application tobusiness problem
TAX MANAGEMENT – II	CDF23001	P01	Understand the concept of Depreciation and rates of depreciation
		P02	Understand and identify the types of Capital Assets
		P03	Understand in detail the concept of Income from other Sources
		P04	Learn in depth the computation of Total Income and Tax Liability
		P05	Learn in depth the concept of Tax deducted at Source
HUMAN RESOURCE MANAGEMENT-I(Elective)	CDF27401	P01	Understand and identify the objectives, principles, factors influencing wage and salaryAdministration
		P02	Understand the concept of wage policy in India

		P03	Learn in depth the objectives of fringe benefits.
		P04	Learn in depth the Methods of performance appraisal
		P05	Understand and identify the essentials of an effective appraisal system
FINANCIAL MANAGEMENT-I(Elective)	CDF28401	P01	Understand and identify the features, importance, contribution of financial service inpromoting industry and service
		P02	Understand the concept of money market and capital market.
		P03	Learn in depth the growth of merchant banking in India
		P04	Learn in depth the Scope of merchant banking services
		P05	Understand the concept of Mutual Funds

HRM-II (Elective)-Employee Empowerment and Industrial Relations	CDF27601	P01	Understand and identify conditions necessary for employee empowerment
		P02	Understand the concept of Quality circles
		P03	Learn in depth the types of social Security
		P04	Understand the concept of trade unions and problems of Trade Union.
		P05	Understand and identify the measures to strengthen trade Union movement in India
FM-II (Elective) Investment Analysis and Portfolio Management	CDF28601	P01	Understand the concept of Investment
		P02	Understand the concept of Portfolio Management Process- Approaches to InvestmentDecision making Portfolio Management Process- Approaches to Investment Decisionmaking
		P03	Learn in depth theCapital Market instruments
		P04	Understand the concept of Risk and Return
		P05	Understand the concept of Portfolio Return and Risk-Measurement

JSS MAHAVIDYAPEETHA

JSS College of Arts, Commerce and Science (Autonomous)

Ooty Road, Mysuru - 570025

List of COs, POs, and PSOs 2022-23

Department: History **Program: BA**

Program Code: BAHiPo32

BAHiEn34

Course	COID	CO
Introduction to Ancient world civilization	FHA4501	Understand the details of Civilization
Introduction to Ancient world civilization	FHA4502	Write down the characteristics of Civilization
Introduction to Ancient world civilization	FHA4503	Identify and classification of different civilizations in ancient world
Rise of Modern west (1600-1871)	FHC4501	Identify in depth reformation and counter-reformation movement
Rise of Modern west (1600-1871)	FHC4502	Learn in detail about Liberalism and Democracy
Rise of Modern west (1600-1871)	FHC4503	Learn the characteristics of Geographical discoveries

POID	PO
HiPo321	Apply methods appropriate for accumulating and interpreting data applicable
HiPo322	Develop an informed familiarity with multiple cultures.
HiPo323	Emerge as a multifaceted personality who is self-dependent.
HiPo324	Correctly extract evidence from primary sources by analyzing and evaluating them in relation to their cultural and historical context.
HiPo325	Develop reading writing communication and reasoning skills
HiEn341	Analyze political problems, arguments, information, and/or theories.
HiEn342	Develop an informed familiarity with multiple cultures.
HiEn343	Comprehend the basic structures and processes of government systems and/or theoretical underpinnings.
HiEn344	Critically recognize the social, political, economic and cultural aspects of History.
HiEn345	Demonstrate thinking skills by analyzing, synthesizing, and evaluating historical information from multiple sources.

JSS Mahavidyapeetha
JSS College of Arts, Commerce and Science (Autonomous)
Ooty Road, Mysuru - 570025
List of COs, POs, and PSOs 2022-23

Department: Sanskrit

Programme: BA/BSC/BVOC

Programme Code: FHA/FSA 030, FPA 120A
Paper 1

Course title	CO ID	CO
Sanskrit Poetry and Grammar		1. The student gets motivated to compose poems.
		2. The student imbibes the noble qualities.
		3. The student develops conviction in scriptures.
		4. The student learns Sanskrit speaking skills.
		5. The student will be confident in learning new texts of Sanskrit.

Programme Code: FHB/FSB 030, FPB 120A

Paper 2

Course title	CO ID	CO
Sanskrit Prose and Grammar		1. The student gets motivated to make out similar works in Sanskrit literature.
		2. The student imbibes the noble qualities depicted in Sanskrit literature.
		3. The student acquires grammatical skills.
		4. The student learns Sanskrit speaking skills.
		5. The student will be confident in learning new texts of Sanskrit.

Programme Code: FHC/FSC 030, FPC 120A

Paper 3

Course title	CO ID	CO
Champu Literature and Grammar		1. The student gets motivated to compose poems.
		2. The student imbibes the noble qualities.
		3. The student develops conviction in scriptures.
		4. The student learns Sanskrit speaking skills.
		5. The student will be confident in learning new texts of Sanskrit.

Programme Code: FHD/FSD 030, FPD 120A

Paper 4

Course title	CO ID	CO
Sanskrit Drama and Dramaturgy		1. The student gets motivated to make out similar works in Sanskrit Drama.
		2. The student imbibes the noble qualities depicted in Sanskrit literature.
		3. The student acquires grammatical skills.
		4. The student learns Sanskrit speaking skills.
		5. The student will be confident in learning new texts of Sanskrit.

PO ID	PO (BA)
	Understand culture and heritage
	Manage business affairs
	Create interest in literature
	Report and edit public events effectively
	Develop reading writing communication and reasoning skills

PO ID	PO (BSC)
	Inculture human values
	It assists in comprehension skills
	Create interest in literature

PO ID	PO (BVOC)
	Understand culture and heritage
	Manage business affairs.
	Create interest in Literature.
	To familiarize students with basic Sanskrit.
	To enable them to develop listening and speaking skills.

Programme: BCOM/BBA/BCA

Programme Code: FCA/FBA/ FAA 030

Paper 1

Course title	CO ID	CO
Sanskrit Poetry and Grammar		1. The student gets motivated to compose poems.
		2. The student imbibes the noble qualities.
		3. The student develops conviction in scriptures.
		4. The student learns Sanskrit speaking skills.
		5. The student will be confident in learning new texts of

Programme Code: FCB/FBB/ FAB 030

Paper 2

Course title	CO ID	CO
Sanskrit Prose and Grammar		1. The student gets motivated to make out similar works in Sanskrit
		literature.
		2. The student imbibes the noble qualities depicted in Sanskrit literature.
		3. The student acquires grammatical skills.
		4. The student learns Sanskrit speaking skills.
		5. The student will be confident in learning new texts of Sanskrit.

Programme Code: FCC/FBC/ FAC 030

Paper 3

Course title	CO ID	CO
Champu Literature and Grammar		1. The student gets motivated to compose poems.
		2. The student imbibes the noble qualities.
		3. The student develops conviction in scriptures.
		4. The student learns Sanskrit speaking skills.
		5. The student will be confident in learning new texts of Sanskrit.

Programme Code: FCD/FBD/ FAD 030

Paper 4

Course title	CO ID	CO
Sanskrit Drama and Dramaturgy		1. The student gets motivated to make out similar works in Sanskrit Drama.
		2. The student imbibes the noble qualities depicted in Sanskrit literature.
		3. The student acquires grammatical skills.
		4. The student learns Sanskrit speaking skills.
		5. The student will be confident in learning new texts of Sanskrit.

PO ID	PO (BCOM)
	Motivated for their higher education
	Write resume, latter of application and business letters
	Improve spoken and written communication

PO ID	PO (BBA)
	Motivated for their higher education
	Write resume, latter of application and business letters
	Improve spoken and written communication

PO ID	PO (BCA)
	Motivated for their higher education
	Write resume, latter of application and business letters
	Improve spoken and written communication

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science (Autonomous)

Ooty Road, Mysuru - 570025

List of COs, POs, and PSOs 2022-23

Department: Botany **Programme: B.Sc. (BZ & CB) (CBZ & BBM)**

Programme Code: BSc BoZo39

B.Sc. BZ & BC

PO ID	PO
P01	Skill development for the proper description using botanical terms, identification, naming and classification of life forms especially plants and microbes.
P02	Acquisition of knowledge on structure, life cycle and life processes that exist among plant and microbial diversity through certain model organism studies.
P03	Understanding of various interactions that exist among plants and microbes; to develop the curiosity on the dynamicity of nature.
P04	Understanding of the major elements of variation that exist in the living world through comparative morphological and anatomical study.
P05	Ability to explain the diversity and evolution based on the empirical evidences in morphology, anatomy, embryology, physiology, biochemistry, molecular biology and life history.
P06	Skill development for the collection, preservation and recording of information after observation and analysis- from simple illustration to molecular database development.

Course title	CO ID	CO
I year, I semester Microbial Diversity and Technology Course code: FSA48039	FSA480391	Understand the fascinating diversity, evolution, and significance of microorganisms.
	FSA480392	Comprehend the systematic position, structure, physiology and life cycles of microbes and their impact on humans and environment.
	FSA480393	Gain laboratory skills such as microscopy, microbial cultures, staining, identification, preservation of microbes for their applications in research and industry.
I year, II semester Diversity of Non-Flowering Plants Course code: FSB48039	FSB480391	Understand the diversity and affinities among Algae, Bryophytes, Pteridophytes and Gymnosperms.
	FSB480392	Understand the morphology, anatomy, reproduction and life cycle across Algae, Bryophytes, Pteridophytes and Gymnosperms, and their ecological and evolutionary significance.
	FSB480393	Obtain laboratory skills/explore non-flowering plants for their commercial applications.

II year, III semester **Plant Anatomy and Developmental Biology** **Course code: FSC48039**	FSC480391	Observation of variations that exist in internal structure of various parts of a plant and as well as among different plant groups in support for the evolutionary concept.
	FSC480392	Skill development for the proper description of internal structure using botanical terms, their identification and further classification.
	FSC480393	Understanding the basic concepts in plant morphogenesis, embryology and organ development.
II year, IV semester **Ecology & Conservation Biology** **Course code: FSD48039**	FSD480391	Understanding the fundamental concepts in ecology, environmental science and phyto geography.
	FSD480392	Concept development in conservation, global ecological crisis, Sustainable development and pros and cons of human intervention.
	FSD480393	Enable the student to appreciate bio diversity and the importance of various conservation strategies, laws and regulatory authorities and global issues related to climate change and sustainable development.

Course title	CO ID	CO
I year, I-Semester OE **Plants and human welfare** **Course code: FSA940**	FSA9401	To make the students familiar with economic importance of diverse plants that offer resources to human life
	FSA9402	To make the students known about the plants used as-food, medicinal value and also plant source of different economic value.
	FSA9403	To generate interest amongst the students on plants importance in day today life, conservation, ecosystem and sustainability.
I year, II semester OE **Plant propagation, nursery management and gardening** **Course code: FSB940**	FSB9401	To gain knowledge of gardening, cultivation, multiplication, raising of seedlings of garden plants.
	FSB9402	To get knowledge of new and modern techniques of plant propagation
	FSB9403	To develop interest in nature and plant life.
II Year, III semester OE **Landscaping and Gardening.** **Course code: FSC940**	FSC9401	Apply the basic principles and components of gardening
	FSC9402	Conceptualize flower arrangement and bio-aesthetic planning

	FSC9403	Design various types of gardens according to the culture and art of bonsai
	FSC9404	Distinguish between formal, informal and free style gardens
	FSC9405	Establish and maintain special types of gardens for outdoor and indoor land scaping

CBCS

Programme specific Outcomes for BSc. in Chemistry, Botany and Zoology

PO ID	PO
P01	Communicate effectively the fundamentals and applications of chemical and Biological sciences
P02	Possess deeper understanding of Natural laws, accuracy and validity of both theoretical and practical knowledge
P03	Explicate ecological interconnectedness of life, by tracing energy and nutrient flows through the environment
P04	Analyse the avenues and remedies for burning environmental issues
P05	Pursue, enhance and appreciate conservation practices for sustainable use of plants and development
P06	Interact with the social activities with ethical approach due to collaborative field visits, Botanical tours and academic trips.

Programme Outcome for Bachelor of Science in Botany, Biochemistry & Microbiology

PO ID	**PO**
P01	Identify the taxonomic position of plants using principles and methods of nomenclature and classification in Botany
P02	Understand the impact of the plant diversity in societal and environmental context
P03	Demonstrate the knowledge of, and need for sustainable development
P04	Use interdisciplinary approaches with quantitative skills to work on biological problems
P05	Develop state-of-the-art laboratory and professional communication skills
P06	Demonstrate the ability to justify and explain their thinking and/or approach
P07	Apply the scientific method to design, execute, and analyze an experiment
P08	Explain scientific procedures and their experimental observations
P09	Demonstrate an understanding of fundamental biochemical principles, structure and function
P010	Work as a laboratory technician, biochemists or medical scientist
P011	Explain the processes used by microorganisms for the growth
P012	Explain the theoretical basis of the tools, technologies and methods of microbiology

B.Sc. CBZ

Course title	**CO ID**	**CO**
III year, V-Semester DSE Cell and Molecular Biology	DME230071	Understand in depth microscopy
	DME230072	Learn the details of cell
	DME230073	Specify the details of DNA

Course code: DME23007	DME230074	Learn the details of gene regulation
III year, V semester SEC Floriculture **Course code:DME23607**	DME236071	Specify the classification and characteristics of gardening
	DME236072	Understand in depth nursery management
	DME236073	Identify in details with examples ornamental plants
III year, VI semester Genetics and Plant Breeding **Course code:DMF23007**	DMF230071	Specify the details of heredity
	DMF230072	Identify in details with examples linkage
	DMF230073	Write down the classification and characteristics of mutations
	DMF230074	Learn the details of plant breeding

B.Sc. BBM

Course title	CO ID	CO
III year, V-Semester DSE Cell and Molecular Biology **Course code: DME23008**	DME230081	Understand in depth microscopy
	DME230082	Learn the details of cell
	DME230083	Specify the details of DNA
	DME230084	Learn the details of gene regulation
III year, V semester SEC Floriculture **Course code: DME23608**	DME236081	Specify the classification and characteristics of gardening
	DME236082	Understand in depth nursery management
	DME236083	Identify in details with examples ornamental plants
III year, VI semester Genetics and Plant Breeding **Course code: DMF23008**	DMF230081	Specify the details of heredity
	DMF230082	Identify in details with examples linkage
	DMF230083	Write down the classification and characteristics of mutations
	DMF230084	Learn the details of plant breeding

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: PG DEPARTMENT OF BOTANY
Programmes offered: M.Sc. in Botany

List of COs, POs, and PSOs (For the year 2022-23):

POM.SC.BOTANY(2022-2023)

POID	PO
BOT20PO1	Conduct investigations ofcomplexproblems by the useofresearch-basedknowledgeonanindependentterm project.
BOT20PO2	Transferofappropriateknowledgeandmethodsfrom onetopictoanotherwithinthesubject.
BOT20PO3	Carryoutpracticalwork,inthefieldandinthe laboratory,withminimalrisk.
BOT20PO4	Abletothinklogicallyandorganizetasksintoastructuredformandassimilate knowledgeandideasbasedonwidereadingoftextbooksandthroughthe internet.
BOT20PO5	Applythescientificknowledgeofbasicscience,lifesciencesandfundamentalpr ocessofplantstostudyand analyzeanyplantform.
BOT20PO6	Knowledgeandunderstandingoftherangeofplantbiologyintermsofstruct ure,function and environmentalrelationships.
BOT20PO7	Applyreasoninginformedbythecontextualknowledgetoassessplantdiversity, andtheconsequentresponsibilitiesrelevanttothebiodiversityconservation practice.

PSOM.SC.BOTANY(2022-2023)

PSOID	PSO
BOA230	Phylogeny,thallusorganisation,economicandecologicalimportanceofalagal community
BOC030	Biomolecules,metabolicpathwaysandstressphysiologyinplants
BOB020	CelloriginalsandMendelianprinciples
BOD010	Diversityofvegetation,distributionanditsconservation
BOB220	Economicvaluesofdifferentcropplantsandtheirapplications
BOD020	Handsonexperienceinvariousfieldsofplant science
BOC040	Molecularlevelorganisationinprokaryotesandeukaryoteswithrespecttovario usmechanismsinvolved

BOB210	Anatomicalfeaturesandorganisationofcellsinplants
BOB030	Plantbreedingmethods,proceduresandtheirapplicationforcropimprovement
BOC050	Tissue culturetechniquesanditsapplicationindevelopmentofresistantvarieties
BOC230	Propagationmethodsandplant breedingproceduresandtheirapplicationindifferent fields
BOC640	Propagationmethodsandproceduresandtheirapplicationindifferentfields
BOA050	Distribution,classificationandphylogenyoflowerplantcommunities
BOA240	Conceptsofplantdiseasesdefencemechanismsinplantsandstudyofplantdiseases
BOB010	Embryologicalstudyofgrowthanddevelopmentusingplantmodels
BOD210	Industrial scaleprocessingofseedsuptomarketing
BOA060	Angiospermicplant familystudywiththeirphylogeny
BOA040	Diversity,distributionofmicroorganismwith respecttotheireconomicaspects

COM.SC.BOTANY(2022-2023)

COURSE TITLE	COURSE CODE	CO NO./ ID	CO STATEMENT
AlgalBiologyandBiotechnology	BOA230	BOA2301	Specifyindepthof thallusorganizationandphylogenyinalgae
AlgalBiologyandBiotechnology	BOA230	BOA2302	Understandthedetails oftoxins,bloomsanddistributionsofalgae
AlgalBiologyandBiotechnology	BOA230	BOA2303	Deliberateindepthaboutcultivationandmarketingalgae
AlgalBiologyand Biotechnology	BOA230	BOA2304	Specifythedetailsof Algalproductsanduses
BiochemistryandPlantPhysiology	BOC030	BOC0301	Learnindetailswithbiomoleculesandtheirfunction
BiochemistryandPlantPhysiology	BOC030	BOC0302	Understandindepthaboutsolutetransportandphotosynthesisinplants
BiochemistryandPlantPhysiology	BOC030	BOC0303	Specifythedetailsofmetabolismofnitrogen,lipidsandplant hormones
BiochemistryandPlantPhysiology	BOC030	BOC0304	Understandindepth aboutStressphysiology
CellBiologyandGenetics	BOB020	BOB0201	Learnindetailaboutcellmembranestransportandproteins
CellBiologyandGenetics	BOB020	BOB0202	DeliberatetheFunctionsofcellorganelles, programedcelldeath
CellBiologyandGenetics	BOB020	BOB0203	Specifytheextensions ofMendelianprinciples
CellBiologyandGenetics	BOB020	BOB0204	LearnaboutSexdeterminationand dosagecompensation

Ecology,ConservationBiologyand Phytogeography	BOD010	BOD0101	Understand thediversityofecosystemandtypes ofecosystems
Ecology,Conservation BiologyandPhytogeography	BOD010	BOD0102	Learntheindetailsof pollutionandenvironmentalbiology
Ecology,ConservationBiologyand Phytogeography	BOD010	BOD0103	Studytheimportanceofbiodiversityand conservationbiology
Ecology,Conservation BiologyandPhytogeography	BOD010	BOD0104	Detailedstudyof phytogeographyandcropdistribution
EconomicBotany	BOB220	BOB2201	Specifythedetailsofcereals,millets,pulses,oilyieldingplantsandstudyofhorticulturalplantsandfloriculture
EconomicBotany	BOB220	BOB2202	Deliberatethecharacteristicsofsugaryieldingplants,spices andcondiments
EconomicBotany	BOB220	BOB2203	Understandtheimportanceoffibre,timberandgumyielding plant
EconomicBotany	BOB220	BOB2204	Deliberateonthe medicinalplantsandtheirapplications
MajorProject	BOD020	BOD0201	Learnthedetailsofliteraturesurveyand methodologyinresearch
MolecularBiology	BOC040	BOC0401	Identifythecharacteristicsofgeneticmaterialsandits replication
MolecularBiology	BOC040	BOC0402	Learnthedetailsofmolecularbasisof mutation,repairandrecombination
MolecularBiology	BOC040	BOC0403	DeliberatethedetailsofRNAformation,processingofRNAand post-RNA
MolecularBiology	BOC040	BOC0404	Understandindepthofgeneregulationinprokaryotesand eukaryotes
PlantAnatomyandHistochemistry	BOB210	BOB2101	Learnindetailsof primaryvegetativebodyoftheplants
PlantAnatomyandHistochemistry	BOB210	BOB2102	Deliberateindetailsofdifferentiationinvascular tissuesandstudyofapicalmeristemsinshootand root
PlantAnatomyandHistochemistry	BOB210	BOB2103	Deliberatethecharacteristicsof secondarygrowth
PlantAnatomyand Histochemistry	BOB210	BOB2104	Understandthedetails ofplanthistochemistry
PlantBreedingandEvolutionaryBiology	BOB030	BOB0301	Learnindepthabout plantbreedingmethodsandtechniques
PlantBreedingandEvolutionaryBiology	BOB030	BOB0302	Understandthedetailsofbreedingforspecificpurposes
PlantBreedingand EvolutionaryBiology	BOB030	BOB0303	Learnthedetailsof Natureofevolution

PlantBreedingandEvolutionaryBiology	BOB030	BOB0304	Identifythecharacteristicsofvariationandspeciation
PlantBiotechnology	BOC050	BOC0501	Understandindepthaboutplanttissuecultureandits techniques
PlantBiotechnology	BOC050	BOC0502	Specifythegeneticengineeringandtools usedinit
PlantBiotechnology	BOC050	BOC0503	Understandthedetailsofgeneticmanipulation,transgenicapproachesto produceresistantplants
PlantBiotechnology	BOC050	BOC0504	Learnthedetailsofengineeringofcrop plantsforproductionofsecondarymetabolites
PlantPropagationandPlantBreeding	BOC230	BOC2301	Learnthedetailsofimportanceofplantpropagation,vegetativepropagationandmicropropagation
PlantPropagationandPlantBreeding	BOC230	BOC2302	Understandingofbasic conceptsofplantbreedingandgenetics
PlantPropagationand PlantBreeding	BOC230	BOC2303	Studytypes,purposesof plantbreeding
PlantPropagationandPlantBreeding	BOC230	BOC2304	Deliberatestudyofadvancedbreeding aspects
PlantPropagationTechniques	BOC640	BOC6401	Learnthedetailsofimportanceofplant propagation
PlantPropagationTechniques	BOC640	BOC6402	Understandindepthabouttypesof vegetativepropagation
PlantPropagation Techniques	BOC640	BOC6403	Learnthetechniquesof buddingandlayering
PlantPropagationTechniques	BOC640	BOC6404	Deliberateindetailswithexamplesofmicro propagationinforestry andhorticultureplants
Phycology,Bryophytes,PteridophytesandGymnosperms	BOA050	BOA0501	Understandthedetailsofdiversity, distribution,pigmentationandlife cycleofalgae
Phycology,Bryophytes,PteridophytesandGymnosperms	BOA050	BOA0502	DeliberateindepthofBryophyteslifecycle,classification,phylogenyandEconomicimportance
Phycology,Bryophytes,PteridophytesandGymnosperms	BOA050	BOA0503	UnderstandthedetailsofPteridophyteslife cycle,phylogeny,classification,economic importanceandanatomy
Phycology,Bryophytes,PteridophytesandGymnosperms	BOA050	BOA0504	WritedownindetailswithexamplesGymnospermshistory,reproduction,economicimportanceand interrelationship
Phytopathology	BOA240	BOA2401	Learnthedetailsoftheconcept,causativeagentsanddiseasecycle ofplantpathogens
Phytopathology	BOA240	BOA2402	Deliberatethedetailsofdefensemechanismsinplantsanditsgenetics
Phytopathology	BOA240	BOA2403	StudyofManagementof plantdiseases

Phytopathology	BOA240	BOA2404	Identifyindetailswithexamplesofdisease sin cropplants
ReproductiveBiologyof AngiospermsandPlant Morphogenesis	BOB010	BOB0101	Understandingthemicrosporogenesisand historicaloverview
ReproductiveBiologyof AngiospermsandPlantM orphogenesis	BOB010	BOB0102	Specifyindetailswithexamplesaboutmegas porogeneis, fertilization,endospermandembryo
ReproductiveBiologyof AngiospermsandPlant Morphogenesis	BOB010	BOB0103	Specifythedetailsofmodelsandconceptsofp lantmorphogenesis
ReproductiveBiologyof AngiospermsandPlantM orphogenesis	BOB010	BOB0104	Understandindetailswithexamplesofplan tgrowthanddevelopment, photomorphogenesis
SeedTechnology	BOD210	BOD2101	Understandtheseed scienceandconcepts
SeedTechnology	BOD210	BOD2102	Studytheseed productionandprocessingmethods
SeedTechnology	BOD210	BOD2103	Learnaboutseedquality parametersandtests
SeedTechnology	BOD210	BOD2104	Deliberatetheprocedure ofseedcertification
SystematicsofAngiosper ms	BOA060	BOA0601	Understandtheprinciplesandapplications ofTaxonomyof Angiosperms
Systematicsof Angiosperms	BOA060	BOA0602	Specifythedetailsof taxonomicliterature
SystematicsofAngiosper ms	BOA060	BOA0603	DeliberateindetailswithexamplesDicotan dmonocotfamilyandfeaturesofclassificati on systems
SystematicsofAngiosper ms	BOA060	BOA0604	Specifyindetailsmolecularsystematics withexamplesof softwaresanddatabases
Virology,Bacteriology, MycologyandPlantPatho logy	BOA040	BOA0401	Learntheclassificationandcharacteristics ofviruses,viroids, Prions anddiseasesofit
Virology,Bacteriology, MycologyandPlantPatho logy	BOA040	BOA0402	DeliberateindetailswithexamplesofBacter ia,archeabacteria,actinomycetesandmyco plasmaandits economicimportance
Virology,Bacteriology, MycologyandPlantPatho logy	BOA040	BOA0403	SpecifytheFungaldiversity,life cycle andeconomicimportanceof fungi
Virology,Bacteriology, MycologyandPlantPatho logy	BOA040	BOA0404	Understandindetailsofetiology,distributi onandmanagementof plantdisease

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: POLITICAL SCIENCE
Programmes offered: B A

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/Id/No.	PO
PO1	Spread the messages of equality, nationality, social harmony and other human values.
PO2	Understand the papers such as Ancient Indian Political Ideas and Institutions throws light on the wisdom of Indian Political Thought bringing along its side the Modern Political Analysis which is skill based paper.
PO3	Understand voluminously about the dimensions of Indian Government, its Parliamentary Procedures, the concerns of Gender in Politics, Gandhian Philosophy and an understanding of the citizens duties and responsibilities

Course title	Course Code	CO No./Id	CO Statement
BASIC CONCEPTS OF POLITICAL SCIENCE	**FHA47032 /FHA47035**	**CO1**	Political Science, theoretically and will gain knowledge to explain and analyse politics at large
		CO2	The dynamics of politics.
		CO3	To inculcate the democratic spirit
POLITICAL THEORY	**FHA48032/ FHA48035**	CO1	The nature and relevance of Political Theory.
		CO2	The different concepts like Liberty, Equality, Justice and Rights.
		CO3	To reflect upon some of the important debates in Political Theory.
WESTERN POLITICAL THOUGHT	**FHB47032/ FHB47035**	CO1	And get an introduction to the Schools of Political Thought and Theory making in the West.
		CO2	And get an introduction to the Schools of Political Thought and Theory making in the West.
		CO3	And familiarize themselves to the Thought and Theory of Western Philosophy.
INDIAN NATIONAL MOVEMENT AND CONSTITUTIONAL DEVELOPMENT	**FHB48032/ FHB48035**	CO1	Understand how the colonial rule was overthrown by the Indian nationalists.
		CO2	Appreciate the ideals and values of Gandhi that resulted in freedom.
		CO3	Examine the problem of Independent India and the role played by great leaders in solving them.

INDIAN GOVERNMENT AND POLITICS	FHC47032/ FHC47035	CO1	Learn how the governments both at the union as well state level operates and what are its challenges.
		CO2	Understand the characteristics of power structures in India and the response of the political parties to the socio-political dynamics.
		CO3	Measure and understand the effects of judicial decisions on policy making and social development in India.
PARLIAMENTARY PROCEDURES IN INDIA	FHD4803/ FHD48035	C01	Aim at understanding the procedural aspects of Parliamentary system of governments.
		CO2	Learn about the privileges of people'srepresentatives and match it with their performance.
		CO3	Understand the working of committees, budgetary aspects and deliberative mechanism within the parliament
ANCIENT INDIAN POLITICAL IDEAS AND INSTITUTIONS	FHD47032 FHD47035	CO1	Aim at understanding the procedural aspects of parliamentary system of governments.
		CO2	Learn about the privileges of people's representatives and match it with their performance.
		CO3	Understand the working of committees, budgetary aspects and deliberative mechanism within the parliament
MODERN POLITICAL ANALYSIS	FHD47032 FHD47035	CO1	Understand the key concepts of Political Institutional working and science within them.
		CO2	Be familiar with the Phenomenon of politics and various explanations relating to the influences that mould the decision making process.
		CO3	Help the students to visualize the working of political institutions and the process of decision making through diagrammatic presentations.
Themes on Comparative Political Theory	ELE260	CO1	Understand in details with application, if applicable, Indian political thought
		CO2	Specify in depth Indian political thought
		CO3	Identify the classification and characteristics of western political thought
		C04	Understand in details with examples western political thought
		CO5	Understand in depth local government Learn the details of regulatory institutions
Modern Governments(UK,USA,SWISS)	ELF260	CO1	Understanding the world politics
		CO2	Enlighting the world governmental system

		CO3	Develop comparative study on governmental systems
		CO4	Deliberate the details with examples fundamental rights
		CO5	Understand the details of comparative study on judiciary system
GE:Reading Gandhi	ELE262	CO1	Specify the details of reading Gandhi
		CO2	Deliberate in depth Gandhi and hind swaraj
		CO3	Learn the details of Gandhi's views on nationalism

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: PG Commerce
Programmes offered

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/PSO Id/No.	PO/PSO
1	Inculcate the knowledge of business and the techniques of managing the Business with special focus on Accounting, finance, and financial services
2	Identify knowledge based accounting principles and the latest application oriented corporate accounting methods.
3	Develop decision making skill through costing methods and practicalapplication of management accounting principles.
4	Enhance taxation skills through a thorough understanding of tax laws

Course title	Course Code	CO No./Id	CO Statement
Accounting Theory	MCA010	1	Acquaint a set of logical principles for evaluation and development of sound accounting practices.
		2	knowledge on conceptual framework of accounting theory
		3	Critical thinking skills to analyse and interpret accounting transactions.
		4	Understand the recognition, measurement and disclosure principles of elements of financial statements.
Corporate Governance And Business Ethics	MCA080	1	Understand the concept of corporate governance
		2	knowledge about corporate ethics and cultural influences
		3	Acquire knowledge of corporate social responsibility and accountability
		4	Analyze the role of E-governance in present scenario.
Advanced Financial Management	MCA090	1	Understand financial management concepts and its important functions.
		2	Learn the process of evaluation of projects
		3	Understand capital structure theories
		4	Identify the dynamics of financial markets
Strategic Marketing	MCA100	1	Understand the marketing strategy

			formulation
		2	Learn the steps in implementation of marketing strategies.
		3	Analyze different marketing strategy
		4	Learn about formulation and evaluation of marketing strategy
Business Policy And Environment	MCA210	1	Insight on policy formation
		2	Understand the environmental factors that influence business
		3	Knowledge and significance of corporate social responsibility
		4	Identify the Principles of Business ethics
Statistics For Business Decisions	MCA220	1	Knowledge about application of probability theory and sampling in different areas of commerce
		2	Analyze the various methods of theoretical probability distribution
		3	Application of different tools in taking business decisions
		4	Learn the advanced application oriented tests – F Distribution and Anova
Organisational Behaviour	MCB030	1	Understand individual behaviour in the organization
		2	Acquire the knowledge about foundation of individual behaviour
		3	Learn and apply skills in motivation
		4	Evaluate individual behaviour in group and resolve the conflicts
Entrepreneurial Development	MCB050	1	Analyze the foundations and different dimensions of Entrepreneurial Development
		2	Acquaint the skills of an young entrepreneurs
		3	Analyze the techniques of project planning, implementation and execution.
		4	Identify the institutional support to entrepreneurs.
Capital Market Instruments	MCB010	1	Understand the role of capital markets
		2	Critically evaluate the various capital market instruments like Stock, bonds etc
		3	Identify the dynamics of global capital markets
		4	Understand the concept and use of

			Derivatives in risk management.
Human Resource Management	MCB240	1	Knowledge about human resources, their significance and management in organizations
		2	Analyze human resource planning
		3	Learn the steps in HRD
		4	Understand reward system and appraisal of individual
Management Of Financial Services	MCB270	1	Understand and appreciate the role of financial services industry
		2	Grasp the trends in financial services industry particularly the impact of globalization of Financial Services
		3	Analyze the factoring services and securitization system.
		4	Gain insight into the future of Financial Services industry
Banking Technology	MCB250	1	Understand the recent developments in banking technology
		2	Assess the impact of technology on banks
		3	Identify the available payment channels and their delivery system.
		4	Verify the global developments in banking technology.
International Business	MCC010	1	Understand the scope of international business along with drivers of globalization
		2	Analyze different aspects of International Business environment and the issues associated with them.
		3	Identify policy and practice skills related to international business
		4	Identify the various modes of entry in international business.
		5	Learn the functioning of WTO, MNC's etc.
Business Research Methods	MCC030	1	Evaluate various research decisions
		2	Learn the methods of data collection
		3	Analysis and interpretation of data
		4	Equip the skills of report writing
Security Analysis And Portfolio Management	MCC040	1	Knowledge about practical aspects of investment analysis
		2	Understand the functions of SEBI
		3	Analyze the various investment alternatives
		4	Learn the skills to construct investment portfolio

Indirect Tax Law and Practice	MCC230	1	Understand the significance and contribution of indirect taxes (GST) in the Indian and global economy.
		2	Comprehend the principles of taxation and incidence process of indirect taxes in market orientated economy.
		3	Understand the implications of indirect taxes on the taxable capacity of consumers, dealers and society at large.
		4	Become tax consultants for tax planning, tax management, payment of tax and filling of tax returns
		5	Understand the impact of GST on Domestic, National and International Trade.
Cost Accounting for Decision Making	MCC250	1	Understand the basic concept of marginal costing.
		2	Analyze and apply of profitability and cost concept.
		3	Evaluate the managerial decisions-make or buy decisions.
		4	Examine the cost accounting techniques.
Personal Financial Management	580	1	Understand personal financial management process.
		2	Plan personal budget effectively
		3	Recognize the significance of financial planning in the changing personal and financial environment.
		4	Assess the merits of various investment alternatives of personal financial planning
International Accounting	MCD010	1	Understand international accounting issues related to global financial reporting.
		2	Examine, analyze and assess theoretical and practical aspects of accounting harmonization.
		3	Identify major diversities and challenges of financial reporting in the global arena and IFRS.
		4	Learn the techniques of international financial statement analysis
Current Trends In Business And Commerce	MCD020	1	Understand changing business and financial environment

		2	Equip the skills required for competitive examinations and JRF, NET and SLET
		3	Develop analysing and decision making skills on current topics of business
		4	Identify the reforms in areas of banking, insurance, capital markets and taxation.
Innovations In Accounting	MCD 210	1	To make students familiar with various innovations taking place in accounting
		2	To learn valuation of human resource
		3	To learn valuing the brand
		4	To understand the concepts of Responsibility accounting
Corporate Tax Law And Planning	MCD230	1	Understand the incidence of tax on residential status of the companies
		2	Understand the different types of companies under corporate income tax act.
		3	Know the different sources of income for corporate assesses.
		4	Become a manger of a company/tax consultant and reduce the tax burden and maximize the company's wealth
		5	Understand the impudence of tax planning with various managerial decisions

Cost Management	MCD250	1	Understand the scope and need for cost control and management.
		2	Familiarize with the basic cost control and management tools.,
		3	Know the manufacturing industries cost system and analysis through the statistical tool.
		4	Understand the importance of operation research in cost control and management

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: **PG Dept. of Mathematics**

Programmes offered: **M.Sc**

List of COs, POs, and PSOs (For the year 2022-23 Only):

PO/PSO Id/No.	**PO/PSO**
PO1	To move away from the conventional pedagogy of teaching mathematics
PO2	To include methods of facilitating learning such as projects, group work and participative learning
PO3	To Innovate, invent and solve complex mathematical problems using the knowledge of pure and applied mathematics
PO4	To impart knowledge of some basic concepts and principles of the discipline
PO5	To establish inter-disciplinarily between mathematics and other subjects from Humanities and the Social Sciences.
PO6	To provide in-service training for school teachers. To learn to apply mathematics to real life situations and help in problem solving
PSO1	Explain the importance of mathematics and its techniques to solve real life problems and provide the limitations of such techniques and the validity of the results
PSO2	Propose new mathematical and statistical questions and suggest possible software packages and/or computer programming to find solutions to these questions
PSO3	Continue to acquire mathematical and statistical knowledge and skills appropriate to professional activities and demonstrate highest standards of ethical issues in mathematics
PSO4	Ability to use computer calculations as a tool to carry out scientific investigations and develop new variants of the acquired methods, if required by the problem at hand.
PSO5	Crack lectureship and fellowship exams approved by UGC like CSIR – NET and SLET.
PSO6	Apply knowledge of Mathematics, in all the fields of learning including higher research and its extensions.

Course title	**Course Code**	**CO No./Id**	**CO Statement**
Algebra-I	MAA010	CO1	Define and interpret the concepts of

			divisibility, congruence, greatest common divisor, prime, and prime-factorization and Apply the Law of Quadratic Reciprocity
		CO2	To analyze and demonstrate examples of subgroups, normal subgroups and quotient groups.
		CO3	Assess properties implied by the definitions of groups and To use the concepts of isomorphism and homomorphism for groups
		CO4	Analyze Permutation groups and the Class Equation and Sylow theorems
		CO5	To demonstrate knowledge of conjugates.
Real Analysis-I	MAA020	CO1	Understand the characteristics of extended real number system, the n-dimensional Euclidean space
		CO2	Study the details of inequalities and its applications
		CO3	Learn the characteristics of sequences and Cauchy's sequences ,upper and lower limits
		CO4	Understand the details of series of real numbers ,tests for convergence
		CO5	Learn in detail with examples-multiplication of series, double series, infinite products
Real Analysis-II	MAA030	CO1	Deliberate in depth the basic topological properties of the subsets of the real numbers
		CO2	Understand in details with examples, Continuity of functions
		CO3	Deliberate the details of Differentiability, mean value theorems
		CO4	Learn the details of The Riemann-Stieltje's integral
		CO5	Identify in detail Integration and differentiation with examples.
Complex Analysis-I	MAA040	CO1	Understand the characteristics of represent complex numbers algebraically and geometrically, Study stereographic projection
		CO2	Understand the characteristics lines and circles
		CO3	Study the characteristics of analytic functions, Cauchy-Riemann equations and harmonic functions

		CO4	Learn in depth sequences and series , uniform convergence of power series and entire functions
		CO5	Learn in detail with examples-linear fractional transformations, cross ratio, symmetry, confirmal mapping, evaluate definiteintegrals
		CO6	Understand different types of Cauchy theorems and Cauchy integral formula and apply these to evaluate integrals
Linear Algebra	MAA210	CO1	Learn in depth Vector Spaces, Subspaces
		CO2	Understand the classification and characteristics of Determinants
		CO3	Learn in details Inner Products and Norms with examples
		CO4	Deliberate the details of normal and Self-Adjoint Operators
		CO5	Analyse the classification and characteristics of The Diagonal form, The Triangular form and its applications
Algebra II	MAB010	CO1	Assess properties implied by the definitions of rings
		CO2	Analyze and demonstrate examples and properties of ideals and quotient rings
		CO3	Demonstrate knowledge of polynomial rings and associated properties
		CO4	Derive and apply Gauss Lemma, Eisenstein criterion for irreducibility of rationals with examples
		CO5	Understand the characteristic of a field and the prime subfield
Real Analysis III	MAB020	CO1	Deliberate in details with examples Sequences and series of functions
		CO2	Understand the characteristics of Uniform convergence continuity,differentiation and integration with examples
		CO3	Identify in details with examples Improper integrals and their convergence
		CO4	Understand in depth Functions of several variables
		CO5	Specify the details of Taylor's theorem, the Maxima and Minima
Complex Analysis-II	MAB030	CO1	Understand in details with application-the residue theorem, evaluation of definite integrals
		CO2	Understand in details with properties of harmonic functions

		CO3	Understand in depth of power series expansions, Weierstrass theorem
		CO4	Learn in detail with examples-partial fractions, study the characteristics of infinite products, canonical products
		CO5	Study the characteristics of the gamma and beta functions, and entire functions
ODPDE	MAB210	CO1	Solve problems in ordinary differential equations, dynamical systems, stability theory and a number of applications to scientific and engineering problems
		CO2	The study of Differential focuses on the existence and uniqueness of solutions also emphansizes the rigorous ustification of methods for approximating solutions in pure and applied mathematics by using power sreies method some polyniomals.
		CO3	Recognize the major classification of PDEs and the qualitative differences between the classes of equations
		CO4	Be competent in solving linear PDEs using classical solution methods.
		CO5	Theory of differential equations is widely used in formulating many fundamental laws of physics and chemistry.
Graph theory	MAB230	CO1	Construct examples and proofs pertaining to the basic theorems
		CO2	Understand the characteristics of external graphs, intersection graphs, operations on graph
		CO3	Write down in detail with examples of cut points, bridges, blocks and block graph
		CO4	Specify the characteristics of trees, centers, and centroids, spanning tree
		CO5	Identify the details of connectivity and the line connectivity, coverings, independence
Elements Functional Analysis	MAC010	CO1	Explain the fundamental concepts of functional analysis.
		CO2	Understand the approximation of continuous functions on linear spaces
		CO3	Understand concepts of Hilbert and

			Banach spaces
		CO4	Understand the definitions of linear functional and prove the Hahn-Banach theorem, open mapping theorem, uniform boundedness theorem, etc.
		CO5	Define linear operators, self adjoint, isometric and unitary operators on Hilbert spaces
Commutative Algebra	MAC210	CO1	Understand in depth commutative ring and local rings with examples
		CO2	Learn the characteristics of Nil radical and Jacobson radical and prime spectrum of a ring
		CO3	Understand the characteristics of Noetherian and Artinian module
		CO4	Identify in details with examples Free modules, Finitely generated modules, Simple modules, Exact sequences of modules
		CO5	Specify the characteristics of Noetherian rings and Artinian rings
Topology-I	MAC020	CO1	Deliberate in details with applications, topological spaces, basis for a topology, the order topology, subspace topology and product topology
		CO2	Learn in depth with closed set and limit point, continuous functions(defined in terms of open sets)
		CO3	Learn in details with examples-the product topology ,metric topology, quotient topology
		CO4	Understand in depth connected spaces , connected sets on the real line , path connectedness
		CO5	Deliberate the characteristics of compact spaces, compact sets on the real line, limit point compactness, local compactness
Theory of Numbers	MAC220	CO1	Know the diophantine equations, prime numbers, irrational numbers and prime-factorization
		CO2	Define and interpret the concepts of Arithmetical Functions and Dirichlet product of Arithmetical functions
		CO3	Provide precise definitions and appropriate examples and counter examples of Representation of a number by two or four squares,

			Fibonnaci and perpect number
		CO4	Know the continued fractions
Basic Mathematics	MCC/BCC/BTC/ BOC/ZOC/CSC 580	CO1	Write an argument using logical notation and determine if the argument is or is not valid
		CO2	Identify sets as well defined collections, represents sets in roster and set builder form, conversion from set builder form to roster form and vice versa.
		CO3	CO3 Identify the subsets of the given sets, find the complement of a subset of a given Set, within a given universe. Represent venn diagram using sets.
		CO4	Use the simple method to solve small linear programming models by hands, given a basic feasible point
		CO5	Understand the definitions of graphs, path, connectedness, cut vertex, bridge, blocks of a graph.
		CO6	Study the properties of trees and matrix of a graph
Measure and Integration	MAD010	CO1	Understand in details with examples Lebesgue measure, outer measure
		CO2	Learn the characteristics of measurable sets and measurable functions
		CO3	Deliberate in details with examples of Integration of measurable functions
		CO4	Learn in details with examples, functions of bounded variation, differentiation of an integral, absolute continuity
		CO5	Understand in depth the general measure theory
Topology-I	MAD020	CO1	Deliberate the classification and characteristics of the countability axioms , the separation axioms
		CO2	Understand the details of Urysohn's lemma , Tietze's extension theorem, partitions of unity
		CO3	Discuss Tychonoff's theorem, local finiteness, Paracompactness
		CO4	Familiar with the construction of the fundamental group of a topological space and applications to covering spaces
Differential Geometry	MAD230	CO1	To introduce the fundamentals of differential geometry primarily by focussing on the theory of curves and

			surfaces in three space.
		CO2	To compute quantities of geometric interest such as curvature, as well as develop a facility to compute in various specialized systems
		CO3	The theory of surfaces introduces the fundamental quadratic forms of a surface, intrinsic and extrinsic geometry of surfaces, and the Gauss theorem
		CO4	Introduce the method of the moving frame and overdetermined systems of differential equations as they arise in surface theory.
Theory of Partitions	MAD220	CO1	Know the definitions of partitions , Euler's theorem on p(n)
		CO2	CO2 Apply the q-binomial theorem and Ramanujan ${}_1\psi_1$ - summation formula
		CO3	Know the congruence of partition
		CO4	To apply the q-series

JSS Mahavidyapeetha

JSS College of Arts, Commerce and Science

Ooty Road, Mysuru – 570 025, Karnataka, India

Name of the Department: **PG Department of Zoology**
Programmes offered: **M.Sc Zoology**

List of COs, POs, and PSOs (2022-23)

PO Id/No.	**PO Statement**
ZOO17.PO1	Imbibe the knowledge with facts and figures related Zoology.
ZOO17.PO2	Understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.
ZOO17.PO3	Identify, formulate, research literature, and analyze complex problems reaching substantiated conclusions using first principles of mathematical, biological, physical and chemical sciences.
ZOO17.PO4	Will be able to think creatively to propose novel ideas in explaining facts and figures or providing new solution to the problems.
ZOO17.PO5	Develop scientific outlook not only with respect to Zoology but also in all aspects related to life.
ZOO17.PO6	Realize that interdisciplinary knowledge in other faculties can have greatly and effectively influence which inspires in evolving new scientific theories and inventions.
ZOO17.PO7	Imbibe ethical, moral and social values in personal and social life leading to highly cultured and civilized personality.
ZOO17.PO8	Develop various communication skills such as reading, listening, speaking, etc.
ZOO17.PO9	Realize that acquiring knowledge is a continuous process and in combination with untiring efforts and positive attitude and other necessary qualities leads towards a successful life.

PSO Id/No.	PSO Statement
ZOO17.PSO1	Understand the classification and taxonomic aspects of the animal world (chordates and non-chordates). The students will be able to identify the taxonomic group of a given animal based on the external characteristics.
ZOO17.PSO2	Understand the basic concepts of Animal physiology. The students will be able to identify and understand the important life processes which are essential for continuation of life on earth.
ZOO17.PSO3	Understand the nature and structure of biomolecules and basic concepts of Biological chemistry.
ZOO17.PSO4	Understand the concepts of Genetics, Cell Biology and Molecular Biology.
ZOO17.PSO5	Understand the basic principles and concepts of environmental science, ecology and nature conservation.
ZOO17.PSO6	Understand the importance of knowledge of wildlife and animal behaviour for conservation and balancing the nature.
ZOO17.PSO7	Understand the tools and techniques employed in Biological research and experiments.
ZOO17.PSO8	Understand the process of evolution.
ZOO17.PSO9	Understand the concept and applications of sericulture, apiculture, animal husbandry, Lac culture etc.

Course title	Course Code	CO No./Id	CO Statement
HC 1.1 Biosystematics and Non Chordata	**ZOA050**	ZOA050.1	Understand the classification of major and minor invertebrate phyla
		ZOA050.2	Give some examples and basic characteristics of each phylum
		ZOA050.3	Understand the evolutionary pathway and its significance
		ZOA050.4	Adaptive characters of animals coming under different invertebrate phyla
HC 1.2 Biological Chemistry	**ZOA060**	ZOA060.1	Identify the five classes of polymeric biomolecules and their monomeric building blocks.
		ZOA060.2	Explain the specificity of enzymes (biochemical catalysts), and the chemistry involved in enzyme action.
		ZOA060.3	Understand types, Structure, biochemical properties, and functions of vitamins.

		ZOA060.4	Explain how the metabolism of organic compounds leads ultimately to the generation of large quantities of ATP.
HC 1.3 Cytogenetics	**ZOA070**	ZOA070.1	Describe the fundamental molecular principles of genetics
		ZOA070.2	Understand the structure and function of DNA & RNA
		ZOA070.3	Understand about the transmission, distribution, arrangement, and alteration of genetic information and how it functions and is maintained in populations
		ZOA070.4	Describe the basics of genetic mapping
		ZOA070.5	Explain basic structure of animal cell and its organelles
		ZOA070.6	Describe the functions and organization of cell organelles
SC 1.4 Tools and Techniques in Biology	**ZOA220**	ZOA220.1	Describe the methodology involved in biotechniques.
		ZOA220.2	Describe the applications of bioinstruments
		ZOA220.3	Demonstrate knowledge and practical skills of using instruments in biology and medical field.
		ZOA220.4	Perform techniques involved in molecular biology and diagnosis of diseases
		ZOA220.5	Update current knowledge regarding biomedical engineering involving new methods and the instrumentation.
SC 1.6 Histology and Histopathology	**ZOA230**	ZOA230.1	Understand the applications of dyes and its classification.
		ZOA230.2	Know the functional morphology of various mammalian organs.
		ZOA230.3	Imbibe the knowledge on histochemical techniques.
		ZOA230.4	Describe the etiology and pathology of liver cirrhosis and atheroscleorsis.
		ZOA230.5	Explain histopathology of breast and prostate tumours.
HC 2.1 Chordata	**ZOB050**	ZOB050.1	Understand the classification of chordates
		ZOB050.2	Give some examples and basic characteristics of protochordates
		ZOB050.3	Give some examples and basic characteristics of vertebrates

		ZOB050.4	Understand the evolutionary pathway and its significance
		ZOB050.5	Analyze adaptive characters of animals coming under different vertebrate classes
HC 2.2 Animal Physiology	**ZOB060**	ZOB060.1	Understand the mechanism of transport of molecules, stepwise release of energy, aerobic and anaerobic respiration
		ZOB060.2	Describe the physiology of digestive and respiratory system of human beings.
		ZOB060.3	Understand the blood composition, types, groups and circulatory system.
		ZOB060.4	Describe the physiology of excretory system and nervous system of human beings.
		ZOB060.5	Know the physiology of sense organs, muscles, and reproductive system.
HC 2.3 Entomology	**ZOB070**	ZOB070.1	Understand insects encountered in agricultural fields.
		ZOB070.2	Envisage an insight on economically important pests of various foods, fiber and household
		ZOB070.3	Understand various insect pest management methods and its significance
		ZOB070.4	Learn to apply various agricultural equipment and understand the effect of chemicals and its dosages in agricultural pest management
		ZOB070.5	Learn to apply the pest control methods wisely to minimise ecological backlash
		ZOB070.6	Discuss the evolutionary significance of insect plant interaction and insect animal interaction.
SC 2.4 Developmental Biology	**ZOB220**	ZOB220.1	Understand the molecular concepts of developmental biology during fertilization
		ZOB220.2	Know about Noble prize concepts during frog development viz., Nucleocytoplasmic interactions
		ZOB220.3	Explain on axis development in drosophila
		ZOB220.4	Describe endocrine and molecular control in metamorphosis of insects and amphibians

		ZOB220.5	Explain the various stages of chick embryonic development
SC 2.5 Immunology	**ZOB230**	ZOB230.1	Outline the key components of the innate and adaptive immune responses.
		ZOB230.2	Describe about cell types and organs which are involved in an immune response
		ZOB230.3	Describe the Infectious diseases, hypersensitivity, autoimmune disorders, immunodeficiency diseases
HC 3.1 Molecular Biology and Biotechnology	**ZOC040**	ZOC040.1	Know nucleic acids, DNA replication and its mechanism.
		ZOC040.2	Understand transcription and its modifications.
		ZOC040.3	Explain genetic code, enzymes, factor and the process of translation.
		ZOC040.4	Analyse gene regulation, lytic and lysogenic cycles in prokaryotes.
		ZOC040.5	Understand gene regulation in eukaryotes.
		ZOC040.6	Explain molecular mechanism of DNA damage repair.
HC 3.2 Reproductive Biology	**ZOC050**	ZOC050.1	Understand structure and function of reproductive organs
		ZOC050.2	Explain the structure of reproductive cells
		ZOC050.3	Describe the role of internal cues in reproduction
		ZOC050.4	Describe the role of external factors in reproduction
		ZOC050.5	Analyse the role of endocrine glands and their secretions in reproduction
		ZOC050.6	Identify the factors affecting fertility
		ZOC050.7	Know different types of assisted reproductive technologies.
HC 3.3 Ecology and Wildlife	**ZOC060**	ZOC060.1	Demonstrate and Understand ecological relationships between organisms and their environment.
		ZOC060.2	Present an overview of diversity of life forms in an ecosystem.
		ZOC060.3	Explain and identify the role of the organism in energy transfers
		ZOC060.4	Describe the Habitat ecology and Resource ecology
		ZOC060.5	Understand the types of environmental Pollution and their management
		ZOC060.6	Scope, Values and Conservation strategies of wildlife.

SC 3.4 Ethology	**ZOC230**	ZOC230.1	1. Evaluate the learning and instinct behavior.
		ZOC230.2	Explain the mechanisms in instinct and behaviour
		ZOC230.3	Explain how animals learn
		ZOC230.4	Compare learning and instinct behaviour.
		ZOC230.5	Analyse any problem about animal behaviour
		ZOC230.6	Explain the importance of evolution for animal behaviour.
		ZOC230.7	Explain evolution and behaviour.
		ZOC230.8	Explain natural selection and behaviour.
		ZOC230.9	Explain the relationship between predators and prey
		ZOC230.10	Explain social behaviour.
OE 3.9 Concepts of Zoology	**ZOC750**	ZOC750.1	Broader understanding of Zoology and its concepts
		ZOC750.2	Understand the concepts and basics of animals taxonomy
		ZOC750.3	Understand the basics of histology
		ZOC750.4	Describe the structure and basic functions of organ systems
		ZOC750.5	Explain ecological concepts and effects of environmental pollution
		ZOC750.6	Explain the mechanism of inheritance.
HC 4.1 Advanced Genetics and Computational Biology	**ZOD030**	ZOD030.1	Understand the genomic organization of prokaryotes and eukaryotes.
		ZOD030.2	Know the applications of various model organisms in genomic research.
		ZOD030.3	Able to analyze the pedigree, psychosomatic disorders, prenatal diagnosis and genetic counselling.
		ZOD030.4	Recognize few heritable diseases in man.
		ZOD030.5	Understand the basic concepts of genomics
		ZOD030.6	Understand the basic concepts of proteomics
		ZOD030.7	Understand the nucleic acid and proteindatabases and tools.
HC 4.2 Applied Zoology	**ZOD040**	ZOD040.1	Explain plant insect interaction, origin of pest and its control.
		ZOD040.2	Understand vectors and its communicable diseases.
		ZOD040.3	Explain races of silkworm their disease and its control.

		ZOD040.4	Know about the importance of insects in forensic science and medicine.
		ZOD040.5	Know about aquaculture and its practices in India.
HC 4.3 Project	**ZOD020**	ZOD020.1	Understand the concepts of Project Management for planning to execution of projects
		ZOD020.2	Find importance of reference work Using tools of information such as periodical ,journals, online resources
		ZOD020.3	Break work down the tasks of project and determine handover procedures
		ZOD020.4	Interpret, analyze and presentation of the results obtained and compare with similar works and draw conclusion.

JSS Mahavidyapeetha
JSS College of Arts, Commerce and Science (Autonomous)
Ooty Road, Mysuru - 570025
List of COs, POs, and PSOs 2022-23

Department: PG dept. of Kannada **Programme: MA in Kannada**

Programme Code: KAN

Course title	CO ID	CO
Praachina Kannada Saahithya : Patya	KNA050A	CO1: Recognize and understand figurative language, such as allegory and metaphor, and literary techniques, like irony, rhyme, and allusion. CO2: Identify the unique qualities of the authors studied, and compare and contrast them CO3: Analyze literary works for their structure and meaning CO4: Able to effectively communicate ideas related to the literary works
Praachina mattu Madhyakaalina Kannada Saahithya Hinnele	KNA020A	CO1: To enable them to have a historical perspective of the development over the centuries. CO2: Identify the unique qualities of the authors studied, and compare and contrast them CO3: Demonstrate knowledge of the style, structure, and content of the assigned literary texts. CO4: Develop a well-written argument about one or more literary texts or authors, and accurately cite literary and other sources
Kannada Chandassina Adhyayana: Patya	KNA030A	CO1: Familiar with Old Kannada Poetry CO2: Adopt the correct reading of Old Kannada poetry CO3: Identify the different forms of meters in the writings of poets of different genre CO4: Learn to apply in creative literature
Vimarsheya Adhyayana	KNA040A	CO1: Creats opportunity to nurture their ability to produce literary texts. CO2: Helps to understand the process of communicating and interpreting human experience through literary representation CO3: They learn to raise significant questions, gather relevant evidence, reach well-reasoned conclusions. CO4: Students also develop an ethical orientation to living as their study of literature encourages them to value human actions, motivations, and differences.
Bhasha Vijnana Adhyayana: Bhasha Vijnanada Mulatatvagalu	KNA210A	CO1: They have the ability to analyse and interpret all aspects of language phenomena CO2: Able to understand the concepts, theories, and methodologies used by linguists. CO3: Helps in qualitative and quantitative analyses of linguistic structure, and patterns of language use. CO4: Developes a significant capacity for adaptation and the ability to question and engage in professional practice CO5: Understand and describe the historical development of the language
Jaanapada Adhyayana:	KNA210	CO1: understood the knowledge of Kannada Folklore

Jaanapada Saahithyada Taatvika Adhyayana		CO2: Students must learn the Ancient and Present styles of Kannada Folklore CO3: Helps the students to undertake Research in the field of Kannada Folklore CO4: understood the importance of Kannada Folklore
Charitrika Adhyayana: Karnataka Samskrutika Charitre	KNA210	CO1: Understood the Concept of Culture and Kannada-Karnataka culture CO2: Learn the History of Kannada Literature CO3: Understood the relationshipbetween historical events and Kannada Literature from 9th to 14th Century. CO4: understood the importance of Kannada Culure
Madhyakaalina Kannada Saahithya : Patya : Vachana Saahithya	KNB010	CO1:Able to understand the background for the linguistic situation of the period. CO2:Appreciate the representative poets, novelists and works of Kannada literature CO3:Identify and describe distinct literary characteristics of the literature of this time period CO4:Able to analyze and interpret texts.
Madhyakaalina Kannada Saahithya : Kaavya	KNB020A	CO1:Helps to understand the historical and cultural contexts of the literature of this period to some major authors, works, and genres. CO2:Imbibe good ethics explored in the works CO3:Helps to Identify the key elements that are distinctive to the artistic achievement of early modern writers. CO4:Reflect and write analytically about the literary texts and their contexts.
Draavida Bhashavijnana	KNB030A	CO1:Earn knowledge on the Origin and Growth of Dravidian Languages CO2:Delevope the skill to write in traditional form CO3:Acquire knowledge to analyse Old Kannada Literature CO4:Able to make the comparitive analysis of Dravidian Literature
Kannada Vimarshe - Patya	KNB040A	CO1:Understand the growth of Kannada Criticism CO2:Able enough to evaluate the present genre writings CO3:Understand to view literature in different dimensions CO4:Learn to write analytically about the literary text and their contexts
Bhasha Vijnana Adhyayana: Kannada Vyakaranagala Thowlanika Samikshe	KNB210	CO1:Able to lidentify the different ways in which grammar has been described. CO2:Imply the use of grammar and vocabulary in speech and writing CO3:Learn how to analyze unfamiliar words by understanding the structure of the Language. CO4:Increase confidence in their ability to read, comprehend, organize, and retain written information
Jaanapada Adhyayana: Janapada Samskuritya Taatvika Adhyana	KNB210	CO1:Understood the concept of Folk theatre setting CO2:Able to understand the different forms of Folk arts CO3:Able to understand the significance of various Folk festivals CO4: Understand the concept of Folk Culture
Charitrika Adhyayana:Kannada Saahithya Charitre	KNB210	CO1: Able to understand the historical background of Kannada Poets CO2: Understand the attitudes of Kannada Poets CO3: Understand the different forms of Kannada Chandasu

		CO4: Understand the relastionshipbetween religion and Literature
Kannada Samskruti Chintane	KNB220	CO1:Acquire knowledge of Different phases of Kannada Culture CO2:Understnand and adopot the values of Rich Heritage of Kannada Culture CO3:Understand the relation between Kannada Language and Culture CO4:Read and analyse the opinions of famous intellectuals about Kannada Culture
Mahile : Samaja-Saahithya	KNB220	CO1:Able to understand the different arguments regarding women status CO2:Students must learn the concept of Feminism CO3:Learn the different types of Feminism CO4:Learn the contribustion of Kannada Poets for feminism in 20th and 21st century
Thowlanika Sahithya : Patya : Mahakavya mattu Nataka	KNC050A	CO1:Explore the connections of literature with history, philosophy, politics, and literary theory CO2:Analyze literary works from various genres for their structure and meaning, using correct terminology CO3:Develop multi-dimensional characters CO4:Help to interact, with other cultural forms of literature.
Adhunika Kannada Saahithyada Hinnele	KNC020	CO1:Develops new thinking on modern writers and their writings. CO2:Identify and describe distinct literary characteristics of 20th century literature CO3:Effectively communicate ideas related to the literary works CO4:Integrate source material into research papers smoothly
Bharathiya Kavyamimamse	KNC030A	CO1:Helps to unfold new spheres of study and research CO2: Understand Indian poetics with its speciality of literary devices CO3: Helps to gain knowledge of poetry as a literary genre CO4: Able to Identify and describe distinct literary characteristics of poetic forms CO5: Able to analyze poetic works for their structure and meaning, using correct terminology
Samshodhana Vidhana	KNC040A	CO1:Understand the Research methodology of Kannada Studies CO2: Understand the historical background of Kannada Research CO3:Learn to utilize the application of the computers CO4:Learn the application of computers in Social media
Bhasha Vijnana Adhyayana : Upabhasha Vijnana	KNC210	CO1: Understand various Kannada Dialects CO2:Learn the Phonetics of Kannada Dialects CO3:Attempt to collect local dialects through field visits by solving survey problems CO4: Analyse the different phases of the growth of kannada dialects
Jaanapada Adhyayana : Karantaka Janapada Kalegalu	KNC210	CO1:Understand the concept of Folk theatre. CO2:Able to understand the various forms of Folk arts CO3:Able to understand the significance of Folk festivels CO4: Understood the concept of Folk Culture
Chaaritrika Adhyayana:	KNC210	CO1:Learn to read inscription.

Shashana Shastra		CO2:Understandkannada culture through inscription. CO3:Gain knowledge to explore and to save Inscription through field work. CO4:Understand research works done in the field of epigraphy.
Kannada Bhashe mattu Saahithya (OE)	KNC530A	CO1:Understand the poetics of old kannada literature. CO2:Understand the difference between medival Kannada literatures with varied themes. CO3:Understand the origin and growth of Kannada language and literature. CO4:Understand contemporary literature short stories and poems.
Adhunika Kannada Saahithya : Patya : Kaavya mattu Kaadambari	KND050A	CO1:Learn different phases of the growth of Kannada novels and poems. CO2: Understand the diverse theams according to period. CO3:Create interest to opt these in their research work. CO4:Motivate young writers.
Pashctya Kavyamimamse	KND020A	CO1:Acquire knowledge on western literary criticism. CO2:Analyse the influence of western lilterary criticism on Kannada literature. CO3:Develop analytical skills. CO4:Identifythe differencebetween eastern and western criticism.
Sumuha Madhyama	KND030A	CO1:Gather knowledge on social and mass media. CO2:Understand the working knowledge about AIR, TV Channels, cienema and press media. CO3:Enhanced communicative skills help in carrier opportunity. CO4:Able to work in various position in media sector.
Avadhika Kaarya/Minor Project	KND040	CO1:Undrstand the research methodology. CO2:Implement the knowledge in their project work. CO3:Learn editing skills. CO4:Helps to pursue doctoral research.
Bhasha Vijnana Adhyayana: Kannada Bhasha Svarupa	KND210	CO1: Developthe ability to analyse and interpret all aspects of language phenomena CO2: Able to understand the concepts, theories, and methodologies used by linguists. CO3: Helps in qualitative and quantitative analyses of linguistic structure, and patterns of language use. CO4: Developes a significant capacity for adaptation and the ability to question and engage in professional practice
Jaanapada Adhyayana : Kannada Janapada Saahithya	KND210	CO1:Understood the concept of Folk theatre setting CO2: Able to understand the different forms of Folk arts CO3:Able to understand the signification of different Folk festivels CO4: Understood the concept of Folk Culture
Charitrika Adhyayana: Karnataka Samskruti : Patya	KND210	CO1: Able to understand the historical background of Kannada Poets CO2: Students must learn the attitudes of Kannada Poets CO3: Understood the different forms of Kannada Chandasu CO4 : Understood the concept of Kannada Literature

POID	PO
KAN	Students will be involved in research activities after learning the reading style, speciality and significance of Kannada Language of different periods like old Kannada, Medieval Kannada and Modern Kannada.
	Apart from learning literature they will gain knowledge and know the importance of various poetic devices, grammar and poetics which form literature.
	They will have knowledge about rich culture of linguistics the origin and growth of Kannada Literature with different forms of Kannada language. They will be involved in research activates after this.
	Study of Culture and various types of criticism will help them to involve themselves in the research activates in those areas. This study encourages them to imbibe them in their cultural studies and research.
	Innovative thinking about language, Literature and culture will be developed which help to adopt those ideologies in research activities indirectly enhances knowledge of student and may result in valued writing works.

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List of COs, POs, and PSOs 2022-23
Department: PG Chemistry **Programme: M.Sc.**

Programme Code: CHE

Course title	CO ID	CO
Concepts & Models of Inorganic Chemistry	21CHA10	Complete understanding of the Periodic table, ionic solids, Lattice energy. VSEPR concepts in analyzing the structures of simple molecules. Understand the utility of various non-aqueous solvents in inorganic synthesis. Various acid-base concepts and their applications in different fields. Chemistry of lanthanides, actinides and their applications.
Stereochemistry & Reaction Mechanism	21CHA11	Optical and geometrical isomerism of Organic compounds. Application of stereochemistry in the study of regioselective and regiospecific reactions. The study of HMOT and its applications to simple organic molecules, and also understand the concept of aromaticity and methods of determining reaction mechanism. Nucleophilic, electrophilic and elimination reactions.
Basic Physical Chemistry	21CHA12	The completion of this course will enable the students to gain the knowledge on fundamentals and theoretical background on the concepts of chemical thermodynamics, chemical kinetics and electrochemistry of solutions. This helps in understanding the stability and energetics of reaction.
Essentials of Analytical Chemistry	21CHA13	To enhance the knowledge on usage of analytical terminologies. To build the skills on statistical analysis and comparison of results. To aquire the skills on sampling, purification, separation and data analysis using instrumental techniques. To excel the knowledge on various separation techniques Explore topics such as experimental design, sampling, calibration strategies, standardization, optimization, statistics and the validation of experimental results.
Analytical Chemistry Practicals	21CHA50	Analyze various samples with different classical and simple instrumental skills. Obtain knowledge for selection of analytical methods with suitable technique being adopted for the analysis different samples like, water, laboratory chemicals and reagents, body fluids such as urine etc. Distinguish classical and nstrumental methods. Propose and conduct experiment for quantification of individual analytes
Inorganic Chemistry Practicals	21CHA51	Determination of various analytes presents in different ore samples by volumetric, gravimetric and spectrophotometric study. The chemistry of redox, complexometric and indirect methods The principle in the semi-micro analysis of an inorganic salt mixture

Organic Chemistry Practicals	21CHA52	Students are involved in the multi-step synthesis of different organic compounds. Understand the qualitative analysis of binary mixture of organic compounds through separation, identification of functional groups and preparation of solid derivatives
Physical Chemistry Practicals	21CHA53	After the completion of this course, the students can able to develop the experimental skill and theoretical interpretation of experimental results of many physical chemistry experiments of chemical kinetics in solution phase, thermodynamics, electrochemistry and spectrophotometry. This helps in academics, research and industries.
Coordination Chemistry	21CHB10	Gain the knowledge of preparative methods of coordination compounds and geometries of different coordination numbers. Understand the CFT and MOT bonding theories of metal complexes. Electronic spectra, magnetic properties and infrared spectroscopy of coordination compounds. In addition, understand the reaction mechanism and photochemistry of coordination compounds.
Synthetic Organic Chemistry	21CHB11	Students are familiar about chemistry of oxidants, reductants and their applications in the organic synthesis. Understand the various catalysts in organic synthesis by known naming reactions. Retro-synthesis and molecular rearrangement.
Principles of Physical Chemistry	21CHB12	Principles of Quantum chemistry and theoretical calculations of energies of molecules and chemical reactions. Apply solutions of the Schrödinger equation for simple systems (particle in a box, rigid rotor, harmonic oscillator) to real systems (vibrational, rotational, and electronic energy states) in determining the energy of stationary states. Explain angular momentum as possessed by atomic or molecular systems, various descriptions of how angular momentum can be coupled, and how conservation of angular momentum is important to spectroscopy. Concepts and applicability of statistical thermodynamics in the calculations of different energies in the reacting system. Applications of phase rule for separation of the metals from ore. Fundamentals of polymers and their applications in controlling the quality and waste management of polymer product.
Molecular Symmetry and Spectroscopy	21CHB13	Molecular symmetry and applications of group theory to CFT, hybridization, MOT and vibrational spectroscopy. Theory and principles of Rotation, Vibration and Raman Spectroscopy.Theory and principles Electronic and Resonance Raman spectroscopy.
Analytical Chemistry Practicals	21CHB50	After studying this course the student to Analyze various samples with different classical and simple instrumental skills. Obtain knowledge for selection of analytical methods with suitable technique being adopted for the analysis different samples like, water, laboratory chemicals and reagents, body fluids such as urine etc. Distinguish classical and instrumental methods.

		Propose and conduct experiment for quantification of individual analytes
Inorganic Chemistry Practicals	21CHB51	Determination of various analytes presents in different ore samples by volumetric, gravimetric and spectrophotometric methods. The chemistry of redox, complexometric and indirect methods The principle in the semi-micro analysis of an inorganic salt mixture
Organic Chemistry Practicals	21CHB52	Students are involved in the multi-step synthesis of different organic compounds. Understand the qualitative analysis of binary mixture of organic compounds through separation, identification of functional groups and preparation of solid derivatives
Physical Chemistry Practicals	21CHB53	After the completion of this course, the students can able to develop the experimental skill and theoretical interpretation of experimental results of many physical chemistry experiments of chemical kinetics in solution phase, thermodynamics, electrochemistry and spectrophotometry. This helps in academics, research and industries
Advanced Inorganic Chemistry	21CHC10	Fundamental concepts of organometallic chemistry and synthesis, structure and bonding in different organometallics and their applications. Homogeneous and heterogeneous catalysts and their applications in the synthesis of organic compounds in industries. Chemistry of main group elements, metal clusters, silicates and silicones and their applications in day to day life.
Organometallic and Photochemistry	21CHC11	Basic concepts of photochemistry and pericyclic reactions and their usefulness in the synthesis of many organic compounds. Synthesis of organic compounds using different organometallic compounds as catalysts. Asymmetric synthesis of organic compounds using chiral compounds.
Advanced Physical Chemistry	21CHC12	Applications of reaction kinetics help in correlating the rates of biological and chemical reactions. Theory and applications of electrochemical systems helps in the field of e-waste management and protection of metals. Fundamentals of X-ray crystallography and structural interpretation by various X-ray diffraction techniques
Chemical Spectroscopy	21CHC13	Understand the spectroscopic techniques such as NMR, IR, UV, and MS for recording and interpretation of spectra. Understand the characterization of chemical compounds. To learn electric and magnetic properties of radiation, molecules and bulk matter and solve the problems related to these properties. Understanding various fragmentation reactions of organic molecules. Predict the NMR, IR, UV, and MS spectra from a given molecular structure, including fragment-ions in MS.
Analytical Chemistry Practicals	21CHC50	Get experience on analysis of various complex mixtures by following multistep reactions. Acquire the knowledge on handling instruments and to overcome the general problems arises during the analysis.

		Acquire industrial skills required for sampling, analytical and interpretation and presentation of results. Possess adequate knowledge on literature search for developed analytical methods
Inorganic Chemistry Practicals	21CHC51	Determination of alloy samples and understanding the electrochemical deposition of metals. Preparation and characterization of coordination compounds. Determination of composition, stability constant and magnetic susceptibility of metal complexes.
Organic Chemistry Practicals	21CHC52	The isolation of caffeine, carotene, lycopene, cincole, azelaic acid and piperine from respective natural sources. Estimation of ketones, sugars, nitro and amino groups in natural products. Interpret UV, IR, NMR and MS data of different organic compounds
Physical Chemistry Practicals	21CHC53	To understand the significance of various factors influencing the reaction rate in proposing the reaction mechanism. To understand electrochemical and spectrophotometric methods of quantification of samples, and also determination of physico-chemical parameters of some important samples.
Bioinorganic Chemistry	21CHD10	Structural building blocks of proteins, nucleic acids and their metal ion interactions. Biological role of Na/K channel, Ca, Vit B12, and coenzymes. Biochemical reactions of several metallo-enzymes and oxygen transport proteins. Medicinal applications of metals and metal complexes, and also treatment of toxicity due to heavy metal ions.
Heterocyclic and Bioorganic Chemistry	21CHD11	Structure, reactivity and synthesis of several heterocyclic compounds. Synthesis, industrial and biological importance of carbohydrates. General synthesis of amino acids, peptides, nucleic acids and their biological significance.
Nuclear, Radiation and Photochemistry	21CHD12	Understand the principlesof photochemistry, Fundamentals of radiation chemistry, experimental methods of detection of radiation and applications of radioisotopes. General aspects of nuclear chemistry, different types of nuclear reactions, production and separation of radioisotopes and also basic features of different types of nuclear reactors.
Instrumental Methods of Analysis	21CHD13	Gain the knowledge on the differences between classical and instrumental methods of chemical analysis. Explain different types of instrumental methods employed in chemical analysis. Develop an understanding of the range and theories of instrumental methods available in analytical chemistry. Make clear distinctions among spectrometric, electro-analytical, thermal and microscopic methods. Gain knowledge pertaining to the appropriate instrumental techniques. Obtain the practical experience in selected instrumental methods of analysis. Develop the skills on instrumental methods for planning, developing, conducting, reviewing, conducting experimentsand reporting results.

Analytical Chemistry Practicals	21CHD50	Get experience on analysis of various complex mixtures by following multistep reactions. Acquire the knowledge on handling instruments and to overcome the general problems arises during the analysis. Acquire industrial skills required for sampling, analytical and interpretation and presentation of results. Possess adequate knowledge on literature search for developed analytical methods
Inorganic Chemistry Practicals	21CHD51	Determination of alloy samples and understanding the electrochemical deposition of metals. Preparation and characterization of coordination compounds. Determination of composition, stability constant and magnetic susceptibility of metal complexes.
Organic Chemistry Practicals	21CHD52	The isolation of caffeine, carotene, lycopene, cincole, azelaic acid and piperine from respective natural sources. Estimation of ketones, sugars, nitro and amino groups in natural products. Interpret UV, IR, NMR and MS data of different organic compounds
Physical Chemistry Practicals	21CHD53	To understand the significance of various factors influencing the reaction rate in proposing the reaction mechanism. To understand electrochemical and spectrophotometric methods of quantification of samples, and also determination of physico-chemical parameters of some important samples.

PO ID	PO
CHE	Work in the pure, interdisciplinary and multidisciplinary areas of chemical sciences and its applications.
	Learn about the potential uses of analytical, inorganic, organic and physical chemistry.
	Acquire knowledge, abilities and insight in well-defined area of research within Chemistry.
	Plan and execute research in frontier areas of chemical sciences.
	Develop knowledge of scientific theories and methods, gain experience in working independently with scientific questions and clearly express opinion on academic issues.
	Acquire the skills of planning and conducting advanced experiments by applying suitable simple and sophisticated analytical techniques.
	Learn professionalism, including the ability to work in teams and apply basic ethical principles.
	Adopt the skills and knowledge required to the professional life, and to qualify for

PO ID	PO
	training as scientific researcher.
	Develop scientific communication skills for differently specialized and non-specialized audiences.
	Gather attention about the physical aspects of chemistry.
	Examine specific phenomena theoretically and/or experimentally, contribute to the generation of new scientific insights or to the innovation of new applications of research in Chemistry.

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List of COs, POs, and PSOs 2022-23

Department: Physics **Programme: M.Sc** **Programme Code:PHY13**

Course Title	COID	CO
Classical Mechanics	43539	After completing this course, the student will be able to: Solve the Newton equations for simple configurations.
Classical Mechanics	43540	Use conservation to solve dynamics problems.
Classical Mechanics	43542	Derive and solve the equations of motions for systems subject to the Principle of Least Action.
Mathematical Methods of Physics-1	43547	Familiar with Tensors, algebra of tensors and Tensor Calculus and its applications in applied sciences and engineering;
Mathematical Methods of Physics-1	43548	Able to solve abstract mathematical problems, recognize real-world problems and to formulate mathematical models for such problems.
Mathematical Methods of Physics-1	43550	Familiar with generating function of the polynomials
Mathematical Methods of Physics-1	43551	Able to Use Legendre polynomials, associated Legendre polynomials in Physics
Mathematical Methods of Physics-1	43552	Able to Use Bessel functions, Spherical harmonics in Physics
Mathematical Methods of Physics-2	43554	After completing this course, the student will be able to: Explain the concepts of Linear vector space.
Mathematical Methods of Physics-2	43558	Explain concepts of eigenvalues and eigenvectors of a matrix.
Mathematical Methods of Physics-2	43559	Use matrices and determinants to solve sets of simultaneous linear equations
Mathematical Methods of Physics-2	43560	Understand the concepts of inner product, orthogonality and orthnormality
Mathematical Methods of Physics-2	43562	Recognize real-world problems and formulation of mathematical models of such problems.
Classical Electrodynamics, Plasma Physics & Optics	43570	Formulate and solve electromagnetic problems with the help of electrodynamic potentials and super potentials

Classical Electrodynamics, Plasma Physics & Optics	43572	Make a detailed account for gauge transformations and their use
Classical Electrodynamics, Plasma Physics & Optics	43577	Formulate self-consistent models for the interaction between matter and Electromagnetic fields.
Classical Electrodynamics, Plasma Physics & Optics	43578	Covariant formulation of electrodynamics, Lagrange formalism
Classical Electrodynamics, Plasma Physics & Optics	43579	Apply the concept of Sspecial theory of relativity for relativistic electrodynamics.
Continuum Mechanics and Relativity	43684	After completing this course, the student will be able to learn: Internal response of materials to external loading
Continuum Mechanics and Relativity	43686	Unique connections between solid and fluid mechanics.
Continuum Mechanics and Relativity	43689	Minkowski space-time
Continuum Mechanics and Relativity	43690	The true nature of Newtonian mechanics and Lorentz Transformations
Continuum Mechanics and Relativity	43691	The concept of constant relative motion of different bodies in different frames
Thermal Physics	43697	After the completion of the course, Student will be: Familiar with Basic concepts of Thermodynamics
Thermal Physics	43699	Mode of heat transfer, the amount of heat energy transferred and conservation of mass and energy equations.
Thermal Physics	43700	Second law of thermodynamics; thermal efficiency and coefficient of performance.
Thermal Physics	43701	concept of ensemble, phase space and the conservation of phase-space density (Liouville's theorem)
Quantum Mechanics - I	43707	After the completion of the course Student will be familiar with: The Basic concepts and mathematical foundations of quantum mechanics
Quantum Mechanics - I	43708	Solutions to the Schrödinger equation for simple potentials.
Quantum Mechanics	43709	The effect of symmetries in quantum mechanics

- I		
Quantum Mechanics - I	43710	The significance of wave function, normalization, uncertainty Principle
Quantum Mechanics - I	43711	The Physical significance of eigen functions and eigen vectors
Spectroscopy and Fourier Optics	43718	Compare and contrast atomic and molecular spectra.
Spectroscopy and Fourier Optics	43720	Understand the molecular absorption and scatter from particulate matter in atomic absorption spectroscopy
Quantum Mechanics-II	43753	Understand the significance of wave function, normalization, uncertainty principle, Physical significance of eigen functions and eigenvectors
Quantum Mechanics-II	43757	The time-independent perturbation theory: Non degenerate Perturbation Theory
Quantum Mechanics-II	43758	Degenerate Perturbation Theory; Fine Structure of Hydrogen, The Zeeman Effect.
Quantum Mechanics-II	43761	The time-dependent perturbation theory
Quantum Mechanics-II	43765	Relativistic quantum mechanics using Klein-Gordon equation and Dirac equation
Condensed Matter Physics	43767	Understand the principles of crystal structure of elements. Instrumentation for crystal studies
Condensed Matter Physics	43768	Evaluation of crystals data and their suitability for single crystal structure analysis.
Condensed Matter Physics	43771	Understand the Structural, Magnetic, Electrical and Semiconducting Properties
Nuclear and Particle Physics	43776	Quantitatively estimates for nuclear phenomena
Nuclear and Particle Physics	43779	Familiarise with theoretical and experiments used in particle physics.
Solid State Physics - I	43799	Learn Dielectrics; Properties and classification
Solid State Physics - I	43800	Learn Ferroelectrics; Properties and classification
Solid State Physics - I	43808	Understand electrical and magnetic properties, transport phenomena
Nuclear Physics - I	43814	After completing this course the student will: Conceptualise the Nuclear Detectors, Nuclear Pulse techniques and Nuclear models
Nuclear Physics - I	43816	Learn High-energy nuclear physics, the behaviour of nuclear matter under extreme conditions.
Solid State Physics - II	43936	Get the understanding about X-ray diffraction (XRD) by Crystals.
Solid State Physics - II	43938	Understand the Physical phenomena and significance of XRD
Solid State Physics -	43940	Be able to make quantitative estimates for structural phenomena

II		of solids.
Solid State Physics - II	43942	Understand the concepts of Dislocations, Imperfections and Defects in Solids
Solid State Physics - II	43943	Appreciate the Luminescent effects and colourcentres in ionic crystals
Solid State Physics - III	43945	Be provided with the understanding about free electron theory of metals
Solid State Physics - III	43947	Learn Semiconductor phenomena; Hall effect, Magneto-resistance phenomenon
Solid State Physics - III	43948	Be able to make quantitative estimates of semiconducting phenomena of solids.
Solid State Physics - III	43949	Describe the effect of excess carriers in semiconducting solids
Nuclear Physics - II	43951	After completing this course the student will: Understand the phenomenon of nuclear fission and its application in energy production.
Nuclear Physics - II	43952	Gain an overview on the neutron physics and nuclear reactor theory.
Electronics	43975	Solve electronic devices and systems using mathematical concepts.
Acclerator Physics	44468	Specify in details with application, if applicable, ion Source
Acclerator Physics	44489	Deliberate the details of Alternating gradient machines
Acclerator Physics	44496	Understand the working of Betatron
Thermal Physics	45186	Specify in depth Phase equilibria
Quantum Mechanics - I	45316	Deliberate the details of Angular Momentum
Nuclear Physics - II	45349	Specify in depth homogeneous reactor
Nuclear Physics - II	45369	Identify the characteristics of critical size and critical mass
Acclerator Physics	45500	Understand the details of Paschen's law for gas breakdown
Electronics	45616	Understand in details with examples BJT AC Analysis
Electronics	45655	Deliberate the characteristics of Operational amplifiers
Electronics	45689	Specify in details with application, if applicable, Flip-Flop
Electronics	45701	Learn in details with application, if applicable, Combinational logic circuits
Solid State Physics - I	47802	Learn the characteristics of tight-binding approximation
Solid State Physics - I	47806	Identify in details with application, if applicable, superconductivity
Condensed Matter Physics	48587	Learn in details with application, if applicable, Magnetic properties of solids
Condensed Matter Physics	48591	Understand the details of Semiconductors
Nuclear Physics - I	48608	Understand in depth Nuclear pulse techniques

PO ID	PO
43524	Think creatively in explaining solutions to the problems.
43521	Understand the basic concepts, fundamental principles and the scientific Theories.
43527	Develop scientific outlook towards all aspects of life.
43519	A research oriented learning to develop analytical problem-solving approaches.
43522	Acquire skills in handling scientific instruments, planning and performing in laboratory experiments.
43525	Realize developments in science subject and interdisciplinary approach.
43517	Identify, formulate and analyze complex problems using first principles.
43528	Effective influence, which inspires in new scientific theories and inventions.

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List of COs, POs, and PSOs 2022-23

Department: PG Biochemistry **Programme: M.Sc**

Course	COID	CO
Analytical Biochemistry-I	47911	Use analytical instruments such as HPLC, GC, Spectrophotometer and Spectrofluorimeter
Analytical Biochemistry-I	47912	Understand the working principle and method of analytical instruments
Analytical Biochemistry-I	47913	Separate the proteins using electrophoretic methods
Analytical Biochemistry-I	47914	Understand the theoretical concepts of centrifugation and microscopy
ChemistryandMetabolismofProteinsand NucleicAcids	47922	Identifythedetailsofaminoacidsandproteins
ChemistryandMetabolismofProteinsand NucleicAcids	47923	Understand in details with application,if applicable, nitrogen metabolism anddegradation
ChemistryandMetabolismofProteinsand NucleicAcids	47924	Write down the classification andcharacteristicsofsynthesisofaminoacidsand proteins
ChemistryandMetabolismofProteinsand NucleicAcids	47925	Write down in details with application,if applicable, metabolism of nucleicacids
ExperimentsinBiochemical Techniques and EnzymologyandSeminar	47926	Identifythe detailsof spectrophotometer
Experiments in BiochemicalTechniques and EnzymologyandSeminar	47927	Identify the details of specific activityofenzymes
Experiments in BiochemicalTechniques and EnzymologyandSeminar	47928	Deliberatethecharacteristicsofgelelectrophoresis
Experiments in BiochemicalTechniques and EnzymologyandSeminar	47929	Deliberatethecharacteristicsofuseofpipettes
Enzymology	47930	Write down in details with examplesenzymekinetics

Enzymology	47931	Identify in details with examplesenzymecatalysedreactions
Enzymology	47932	Identifythecharacteristicsofcooperativityrea ctions
Enzymology	47933	Learn the classification andcharacteristicsofmultienzymecomplexreactions
ChemicalPrinciplesand BiochemicalReactions	47934	Specify in details with exampleschemicalprinciplesandbonding
ChemicalPrinciplesand BiochemicalReactions	47935	Writedownindepththermodynamics
ChemicalPrinciplesand BiochemicalReactions	47936	Learnindetailswithapplication,ifapplicable,stereo chemistry
ChemicalPrinciplesand BiochemicalReactions	47937	Deliberate in depth secondarymetabolites
AnalyticalBiochemistry−II	47938	Identifyindetailswithapplication,ifapplicable,flowcy tometry
AnalyticalBiochemistry−II	47940	Specifythecharacteristicsofbiosensortechnology
AnalyticalBiochemistry−II	47941	Understand in details with examplesspectroscopy
AnalyticalBiochemistry−II	47942	Write down the details of x-raycrystallography
ChemistryandMetabolismof CarbohydratesandLipids	47943	Understandtheclassificationandcharacteristics of chemistry ofcarbohydrates
ChemistryandMetabolismof CarbohydratesandLipids	47944	Deliberatetheclassificationandcharacteristicsof bioenergetics
ChemistryandMetabolismof CarbohydratesandLipids	47945	Writedownthecharacteristicsofchemistryof lipids
Experimentsin Immunologyand BiochemicalEstimationsandSe minar	47947	Understandindetails withexamples antigen antibodyreactions
ExperimentsinImmunologyand Biochemical Estimations andSeminar	47949	Specify in details with application, ifapplicable,oils andfats estimation
ExperimentsinImmunologyand Biochemical Estimations andSeminar	47950	Understand in depth acid valueprincipleanddetermination
ExperimentsinImmunologyand Biochemical Estimations andSeminar	47951	Identify in details with examplesmitosis andmeiosis
Immunologyand Microbiology	47952	Identify in details with examplesantigensand antibodies

Immunologyand Microbiology	47953	Understandthedetailsofcellularbasisofimmunity
Immunologyand Microbiology	47955	Identify the classification andcharacteristicsofMHCComplex
Immunologyand Microbiology	47956	Learnindepthbasicconceptsofmicrobiology
HumanPhysiologyan dNutrition	47958	Identifyindepthdigestiveandexcretorysystems
HumanPhysiologyan dNutrition	47959	Learnindetailswithapplication,ifapplicable,concep ts of nutrition
HumanPhysiologyan dNutrition	47960	Specifythedetailsofvitaminsandminerals
CellBiology,Endocrinologyand CellSignaling	47961	Specifyindetailswithexamplescellularorganizati on
CellBiology,Endocrinologyand CellSignaling	47962	Learnthecharacteristicsofendocrinology
CellBiology,Endocrinologyand CellSignaling	47963	Learnindepth cellsignaling
CellBiology,Endocrinologyand CellSignaling	47964	Writedownthecharacteristicsofmembranebiolog y
ClinicalBiochemistry	47965	Identifyindetailswithapplication,ifapplicable, specimen collection andanalysis
ClinicalBiochemistry	47966	Specify in details with application, ifapplicable,metabolic disorders
ClinicalBiochemistry	47967	Writedownthecharacteristicsofhormonaldisorde rs
ClinicalBiochemistry	47968	Write down in details with application,ifapplicable, hematology
Biotechnology& Research Methodology	47973	Understand the concepts of biotechnology
Biotechnology & Research Methodology	47974	Provide examples of current applications of biotechnology
Biotechnology & Research Methodology	47975	Explain the concept and application of enzyme technology
Biotechnology & Research Methodology	47976	Explain the general principles of generating transgenic plants, animals and microbes
Biotechnology & Research Methodology	47977	Understand the concepts of research methods, tools and ethics
MolecularBiologyandGeneR egulation	47981	WritedownthecharacteristicsofDNAcharacteristicsand replication

MolecularBiologyandGeneRegulation	47982	Write down in depth Transcription andregulation
MolecularBiologyandGeneRegulation	47983	Learnindepthtranslation
MolecularBiologyandGeneRegulation	47985	Identifyindepthtranslationalregulation
GeneticsandGeneticEngineering	47986	Deliberateindetailswithexamplesgeneorganization
GeneticsandGeneticEngineering	47987	Understand the classification andcharacteristicsofpopulationgenetics
GeneticsandGeneticEngineering	47988	Deliberatethedetailsof cloningvectors
GeneticsandGeneticEngineering	47989	Understandthedetailsofapplicationsofgeneticengineering

POID	PO
48032	Providesasubstantialelementofhands-onresearchexperience,withenhancedexperimental skills
48035	Demonstratesdetailedknowledgeandunderstandingoftheprinciplesandtheories ofbiochemistry
48036	Helpstounderstandtheprincipaltechniquesofbiomolecularstructuralcharacterization,including spectroscopy
48016	Provideswiththe necessaryknowledgeandskills toundertakea careerinresearch,either in industryorin anacademicsetting
48022	Equipsto applyforaPhDorto gainemployment in biochemistryandalliedareas
48017	Providesthebreadthand depthofscientificknowledgein‘Biochemistry’andallied areas

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List of COs, POs, and PSOs 2022-23

Department: PG Department of Computer Application **Programme: MCA**

Programme Code: MCA

Course title	CO ID	CO
Java Programming	IT11	CO1: Demonstrate and implement programs using components and constructs of a Javalanguage CO2: Identify classes, objects, members of a class and use packages and interfacesappropriately. CO3: Demonstrate for Java program for multithread, synchronization and exception handlingconcepts. CO4: Use the concept of string, event handling, simple data structures like arrays and members of classes of Java API in application development CO5: Design and develop Java based UI and Networking applications using applets, swing components and networking concepts.
Data Structure and Algorithms	IT12	CO1: Design and analyze programming problem statements. CO2: Choose appropriate data structures and algorithms, understand the ADT/libraries, and use it to design algorithms for a specific problem. CO3: Apply mathematical abstraction to solve problems. CO4: Analyze algorithms and to determine algorithm correctness and time efficiency class.
Computer Organisation and Architecture	IT13	CO1: Computer Architecture-Hardware, software CO2: Design of Interfaces CO3: Addressing Modes
Operating System Concepts	IT14	CO1: Recognize the structure of operating system, interaction of an operating system and application programs. CO2: Analyze the various programming paradigms viz., multi-process and multi-threadedprogramming. CO3: Examine the various resource and memory management techniques. CO4: Distinguish the different features of real time and mobile operating systems. CO5: Identify current issues in system security; demonstrate various factors can influence the overall performance of an operating system.

Computer Networks	IT15	CO1: Analyze and distinguish the basic concepts, principles and techniques of data communication along with the layers of OSI and TCP/IP model. CO2: Independently understand and distinguish the concept of links, nodes and data transmission issues in the network. CO3: Capability to categorize wired LANs: Ethernet, IPv4 addresses and performance of The network-layer. CO4: Design and demonstrate the services of TCP and UDP. CO5: Ability to summarize and interpret the basic concepts of Application-Layer paradigms and standard client-server protocols.
Management Information System	BT11	CO1: Apply the different strategies for the management of business to formulate businessprocess. CO2: Analyze the need for business process re-engineering, and the process of making. CO3: Analyze and examine business information needs to facilitate evaluation of strategicalternatives. CO4: Apply Management Information Systems knowledge and skills learned to facilitate the acquisition, development, deployment, and management of information systems. CO5: Effectively communicate strategic alternatives to facilitate decision-making.
Mathematical foundations	MT11	CO1: Implement statistical measures and explore its applications CO2: Analysis of computational errors and design of algorithms to solve a set of linearequations. CO3: Applying the concepts of vector and linear functions in real time applications. CO4: Apply the notion of relations on finite structures, like strings and analyze algorithms using the concept of functions. CO5: Explore the properties of Graph theory and its applications in computer science.
Python Programming	IT21	CO1: Design and apply a solution clearly, accurately in a program using python. CO2: Comprehend and Apply knowledge in real time situational problems and think creatively about solutions. CO3: Apply the best features of mathematics, engineering and natural sciences to program using

		python. CO4: Apply object-oriented programming concepts to develop dynamic interactive Pythonapplications. CO5: Demonstrate how to build and package python modules for reusability.
Software Architecture	IT22	CO1: Comprehend the need and importance of software architectures. CO2: Differentiate various architectural styles based on requirement. CO3: Implement system qualities during architecture development for the application. CO4: Apply pattern oriented architecture by understanding patterns and their descriptions. CO5: Design and document the software architecture.
Optimization Techniques	MT21	CO1: Understand the role and principles of optimization techniques in business world (Understand) CO2: Demonstrate specific optimization technique for effective decision making (Apply) CO3: Apply the optimization techniques in business environments (Apply) CO4: Illustrate and infer for the business scenario (Analyze) CO5: Analyze the optimization techniques in strategic planning for optimal gain. (Analyze)
Advanced Internet Technologies	IT23	CO1: Outline the basic concepts of Advance Internet Technologies (Understand) CO2: Design appropriate user interfaces and implements webpage based on given problem Statement (Apply) CO3: Implement concepts and methods of NodeJS (Apply) CO4: Implement concepts and methods of Angular (Apply) CO5: Build Dynamic web pages using server-side PHP programming with Database Connectivity (Apply)
Analysis and Design of Algorithms	IT24	CO1: Apply object oriented techniques to solve bigger computing problems CO2: Explore the knowledge of computational complexity, approximation and randomized algorithms CO 3: Analyze the range of the algorithm and the notion of tractable and intractableproblems CO 4: Design and analyze a wide range of searching and sorting algorithms CO 5: Implementation of graph and matching algorithms

DBMS	IT 25	
NOSQL	ET22	CO1: Demonstrate competency in describing how NoSQL databases differ from relational databases from a theoretical perspective. CO2: Demonstrate competency in designing NoSQL database management systems CO3: Use of a number of NoSQL databases to store and retrieve data and perform aggregation functions CO4: Demonstrate competency in selecting a particular NoSQL database for different applications. CO5: Execute various CRUD operations with MongoDB.
Mobile Application Development	IT31	CO1: Gain broad understanding of the discipline of Mobile Application Development using J2ME Technology. CO2: Develop User Interface for a J2ME application CO3: Manage data on both service-side components and client-side applications and Address Portability and Compatibility issues between PDA'S and Cell phones. CO4: Implement the design using Android SDK. CO5: Implement the design using Objective C and Ios
Data Warehousing and Data Mining	IT32	CO1: Design a data warehouse or data mart to present information needed by management in a form that is usable for management client & Comprehend several data preprocessing methods. CO2: Ability to do Conceptual, Logical, and Physical design of Data Warehouse CO3: Able to produce and document dimensional models for a data warehouse based on an informal domain description. CO4: Utilize the concept of data warehouse and OLAP for data Warehousing and tools. CO5: xtrapolate knowledge and skills to design a data warehouse to support and providebusiness solutions
Software Testing and Quality Assurance	IT33	CO1: Gain knowledge on basics of Software Testing, Test case selection and creation . CO2: Illustrate various perspectives of testing with examples. CO3: Use by differentiating boundary value testing, Equivalence class testing, Decision table based testing. CO4: Implement Path testing and Data flow testing

		based on the requirements CO5: Comprehend different levels of testing, Integration testing and Fault based testing.
.NET Technologies	IT34	CO1: Develop application using the concept of .NET framework and basics of C# .NET. CO2: Create server side applications using C#.NET. CO3: Develop web applications using the ASP.NET. CO4: Comprehend ASP.NET web form, state management and error handling mechanism. CO5: Access and manipulate data in a database by using Microsoft ADO.NET
Cloud Computing	IT35	CO1: Interpret the basic concepts, principles and techniques of data mining. CO2: Apply knowledge discovery techniques while mining the data; recognize & fixing the issues in data mining. CO3: To apply the techniques of clustering, classification, association finding, feature selection and visualization of real world data. CO4: Demonstrate the real world problem has a data mining solution. CO5: Apply evaluation metrics to select data mining techniques.
Cryptography and Network Security	IT36	CO 1: Explore the need for computer security concepts. CO 2: Apply the principles and techniques of symmetric key encryption and public key encryption. CO 3: Demonstrate the specifics of message authentication codes and hash algorithms. CO 4: Analyze the facts of e-mail security and IP security evolution. CO 5: Comprehend Web Security, Secure Electronic Transaction, Intruder detection and Firewalls.
Big Data Analytics	ET32	CO1: Demonstrate the knowledge, significance structure and sources of Big Data. CO2: Ability to think critically in making decisions based on data analytics, specific to Big Data. CO3: Apply the technical skills in predicative and perspective modelling to support business decisions. CO4: Comprehend decision tools and techniques for data streaming using various algorithms. CO5: Demonstrate the Knowledge gained on mining social network data.
Business Intelligence	BM41	CO1: Comprehend the basics and fundamentals of BI with its business and technical needs CO2: Use the requirements and architectural framework of BI CO3:Know and differentiate different components of the BI framework

		CO4: Design BI concepts by understanding the requirement needs CO5: Analyze and implement advanced BI techniques and analytics

PO ID	PO
MBA	Identify, formulate, and solve computer science problems
	Design, implement, test, and evaluate a computer system, component, or algorithm to meet desired needs
	Receive the broad education necessary to understand the impact of computer science solutions in a global and societal context
	Communicate effectively
	Success in research or industry related to computer science
	Have solid knowledge in computer science and engineering, including programming and languages, algorithms, theory, databases, etc.
	Integrate well into and contribute to the local society and the global community related to computer science
	Practice a high standard of professional ethics
	Draw on and integrate knowledge from many related areas
	Identify, formulate, and solve computer science problems
	Design, implement, test, and evaluate a computer system, component, or algorithm to meet desired needs

JSS Mahavidyapeetha
JSS College of Arts, Commerce and Science
Ooty Road, Mysuru – 570 025, Karnataka, India

2022-23

Name of the Department: PG Department of Chemistry
Programmes offered: M.Sc. in Chemistry

List of COs, POs, and PSOs:

PO/PSO Id/No.	PO/PSO
PO1	Students will have a strong foundation in the fundamentals and applications of current theoretical and practical chemistry in Analytical, Inorganic, Organic and Physical Chemistry.
PO2	Students will be able to design and carry out scientific experiments and accurately record and analyze the results of the experiments.
PO3	Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
PO4	Students will be able to explore new areas of research in both chemistry and allied fields such as Biochemistry, Material Chemistry, Pharmaceutical chemistry and Chemical biology and related technology.
PO5	Students will understand the central role of chemistry to our society which includes understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
PSO1	Global level research opportunities to pursue Ph.D. programme, targeted approach of CSIR – NET and competitive civil service examinations.
PSO2	Enormous job opportunities at all levels of teaching, chemical, pharmaceutical, food products, life-oriented material industries.
PSO3	Specific placements in R & D and many pharmaceutical & other industries.
PSO4	Facile development for the synthesis of biologically significant organic molecules using the green route for chemical reactions for sustainable properties.
PSO5	To inculcate the scientific temperament in the students and outside the scientific community.
PSO6	Learnttohandlesophisticatedequipmentforthedeterminationand characterization of chemical compounds.
PSO7	Use of the latest chemistry software to avoid the laborious work in research.

Course Title	Course Code	CO No./Id	CO Statement
Concepts and Models of Inorganic Chemistry	21CHA10	CO1	The periodic properties of the elements, structures of ionic solids and their lattice energy calculations. Further, the use of VSEPR concepts in analyzing the structures of simple molecules.
		CO2	Various acid-base concepts and their applications in different fields. Also, understand the utility of various non-aqueous solvents in inorganic synthesis.
		CO3	Complete understanding of the chemistry of lanthanides, actinides and their applications.
Stereochemistry and Reaction Mechanism	21CHA11	CO1	Optical and geometrical isomerism of Organic compounds. Application of stereochemistry in the study of regioselective and regiospecific reactions.
		CO2	The study of HMOT and its applications to simple organic molecules, and also understand the concept of aromaticity and methods of determining reaction mechanism.
		CO3	Nucleophilic, electrophilic and elimination reactions.
Basic Physical Chemistry	21CHA12	CO1	The completion of this course will enable the students to gain the knowledge on fundamentals and theoretical background on the concepts of chemical thermodynamics, chemical kinetics and electrochemistry of solutions.
		CO2	This helps in understanding the stability and energetics of reaction
Essentials of Analytical Chemistry	21CHA13	CO1	To enhance the knowledge on usage of analytical terminologies
		CO2	To build the skills on statistical analysis and comparison of results
		CO3	To aquire the skills on sampling, purification, separation and data analysis using instrumental techniques.
		CO4	To excel the knowledge on various separation techniques
		CO5	Explore topics such as experimental design, sampling, calibration strategies, standardization, optimization, statistics and the validation of experimental results
Analytical Chemistry Practicals	21CHA50	CO1	Analyze various samples with different classical and simple instrumental skills.
		CO2	Obtain knowledge for selection of analytical methods with suitable technique being adopted for the analysis different samples like, water, laboratory chemicals and reagents, body fluids such as urine etc.
		CO3	Distinguish classical and instrumental methods.
		CO4	Propose and conduct experiment for quantification of individual analytes.
Inorganic chemistry Practicals	21CHA51	CO1	Determination of various analytes presents in different ore samples by volumetric, gravimetric and spectrophotometric methods.
		CO2	The chemistry of redox, complexometric and indirect

			methods
		CO3	The principle in the semi-micro analysis of an inorganic salt mixture
Organic Chemistry Practicals	21CHA52	CO1	Students are involved in the multi-step synthesis of different organic compounds.
		CO2	Understand the qualitative analysis of binary mixture of organic compounds through separation, identification of functional groups and preparation of solid derivatives.
Physical Chemistry Practicals	21CHA53	CO1	After the completion of this course, the students can able to develop the experimental skill and theoretical interpretation of experimental results of many physical chemistry experiments of chemical kinetics in solution phase, thermodynamics, electrochemistry and spectrophotometry.
		CO2	This helps in academics, research and industries.
Coordination Chemistry	21CHB10	CO1	Gain the knowledge of preparative methods of coordination compounds and geometries of different coordination numbers.
		CO2	Understand the CFT and MOT bonding theories of metal complexes.
		CO3	Electronic spectra, magnetic properties and infrared spectroscopy of coordination compounds. In addition, understand the reaction mechanism and photochemistry of coordination compounds.
Synthetic Organic Chemistry	21CHB11	CO1	Students are familiar about chemistry of oxidants, reductants and their applications in the organic synthesis.
		CO2	Understand the various catalysts in organic synthesis by known naming reactions.
		CO3	Retro-synthesis and molecular rearrangement.
Principles of Physical Chemistry	21CHB12	CO1	Principles of Quantum chemistry and theoretical calculations of energies of molecules and chemical reactions.
		CO2	Apply solutions of the Schrödinger equation for simple systems (particle in a box, rigid rotor, harmonic oscillator) to real systems.
		CO3	Explain angular momentum as possessed by atomic or molecular systems, various descriptions of how angular momentum can be coupled, and how conservation of angular momentum is important to spectroscopy.
		CO4	Rotational, and electronic energy states) in determining the energy of stationary states.
		CO5	Fundamentals of polymers and their applications in controlling the quality and waste management of polymer product.
Molecular Symmetry and Spectroscopy	21CHB13	CO1	Molecular symmetry and applications of group theory to CFT, hybridization, MOT and vibrational spectroscopy.
		CO2	Theory and principles of Rotation, Vibration and Raman Spectroscopy.
		CO3	Theory and principles Electronic and Resonance Raman

			spectroscopy.
Analytical Chemistry Practicals	21CHB50	CO1	Analyze various samples with different classical and simple instrumental skills.
		CO2	Obtain knowledge for selection of analytical methods with suitable technique being adopted for the analysis different samples like, water, laboratory chemicals and reagents, body fluids such as urine etc.
		CO3	Distinguish classical and instrumental methods.
		CO4	Propose and conduct experiment for quantification of individual analytes.
Inorganic chemistry Practicals	21CHB51	CO1	Determination of various analytes presents in different ore samples by volumetric, gravimetric and spectrophotometric methods.
		CO2	The chemistry of redox, complexometric and indirect methods
		CO3	The principle in the semi-micro analysis of an inorganic salt mixture
Organic Chemistry Practicals	21CHB52	CO1	Students are involved in the multi-step synthesis of different organic compounds.
		CO2	Understand the qualitative analysis of binary mixture of organic compounds through separation, identification of functional groups and preparation of solid derivatives.
Physical Chemistry Practicals	21CHB53	CO1	After the completion of this course, the students can able to develop the experimental skill and theoretical interpretation of experimental results of many physical chemistry experiments of chemical kinetics in solution phase, thermodynamics, electrochemistry and spectrophotometry.
		CO2	This helps in academics, research and industries.
		CO4	Make clear distinctions among spectrometric, electro-analytical, thermal and microscopic methods.
		CO5	Gain knowledge pertaining to the appropriate instrumental techniques.
		CO6	Obtain the practical experience in selected instrumental methods of analysis.
		CO7	Develop the skills on instrumental methods for planning, developing, conducting, reviewing, conducting experiments and reporting results.
Advanced Inorganic Chemistry	21CHC10	CO1	Fundamental concepts of organometallic chemistry and synthesis, structure and bonding in different organometallics and their applications.
		CO2	Homogeneous and heterogeneous catalysts and their applications in the synthesis of organic compounds in industries.
		CO3	Chemistry of main group elements, metal clusters, silicates and silicones and their applications in day-to-day life.
Organometallic and	21CHC11	CO1	Basic concepts of photochemistry and pericyclic reactions and their usefulness in the synthesis of many

Photochemistry			organic compounds.
		CO2	Synthesis of organic compounds using different organometallic compounds as catalysts.
		CO3	Asymmetric synthesis of organic compounds using chiral compounds.
Advanced Physical Chemistry	21CHC12	CO1	Applications of reaction kinetics help in correlating the rates of biological and chemical reactions.
		CO2	Theory and applications of electrochemical systems helps in the field of e-waste management and protection of metals.
		CO3	Fundamentals of X-ray crystallography and structural interpretation by various X-ray diffraction techniques.
Chemical Spectroscopy	21CHC13	CO1	Understand the spectroscopic techniques such as NMR, IR, UV, and MS for recording and interpretation of spectra.
		CO2	Understand the characterization of chemical compounds.
		CO3	To learn electric and magnetic properties of radiation, molecules and bulk matter and solve the problems related to these properties.
		CO4	Understanding various fragmentation reactions of organic molecules.
		CO5	Predict the NMR, IR, UV, and MS spectra from a given molecular structure, including fragment-ions in MS.
Analytical Chemistry Practicals	21CHC50	CO1	Get experience on analysis of various complex mixtures by following multistep reactions.
		CO2	Acquire the knowledge on handling instruments and to overcome the general problems arises during the analysis.
		CO3	Acquire industrial skills required for sampling, analytical and interpretation and presentation of results.
		CO4	Possess adequate knowledge on literature search for developed analytical methods.
Inorganic Chemistry Practicals	21CHC51	CO1	Determination of alloy samples and understanding the electrochemical deposition of metals.
		CO2	Preparation and characterization of coordination compounds.
		CO3	Determination of composition, stability constant and magnetic susceptibility of metal complexes.
Organic Chemistry Practicals	21CHC52	CO1	The isolation of caffeine, carotene, lycopene, cincole, azelaic acid and piperine from respective natural sources.
		CO2	Estimation of ketones, sugars, nitro and amino groups in natural products.
		CO3	Interpret UV, IR, NMR and MS data of different organic compounds.
Physical chemistry practical	21CHC53	CO1	Students can able to develop experimental skill and interpretation of plausible mechanisms of reactions.
		CO2	Gain practical knowledge on the theoretical basis of electrochemistry, thermodynamics, and spectrophotometry experiments.

		CO3	This helps in academics, research and industries.
Bioinorganic Chemistry	21CHD10	CO1	Structural building blocks of proteins, nucleic acids and their metal ion interactions. Biological role of Na/K channel, Ca, Vit B12, andcoenzymes.
		CO2	Biochemical reactions of several metallo-enzymes and oxygen transport proteins.
		CO3	Medicinal applications of metals and metal complexes, and also treatment of toxicity due to heavy metalions.
Heterocyclic and Bioorganic Chemistry	21CHD11	CO1	Structure, reactivity and synthesis of several heterocyclic compounds.
		CO2	Synthesis, industrial and biological importance of carbohydrates.
		CO3	General synthesis of amino acids, peptides, nucleic acids and their biological
Nuclear, Radiation and Photochemistry	21CHD12	CO1	Understand the principles of photochemistry,its experimental techniques and applications.
		CO2	Fundamentals of radiation chemistry, experimental methods of detection of radiation and applications ofradioisotopes
		CO3	General aspects of nuclear chemistry, different types of nuclear reactions, production and separation of radioisotopes and also basic features of different types of nuclearreactors.
Instrumental Methods of Analysis	21CHD13	CO1	Gain the knowledge on the differences between classical and instrumental methods of chemical analysis.
		CO2	Explain different types of instrumental methods employed in chemical analysis.
		CO3	Develop an understanding of the range and theories of instrumental methods available in analytical chemistry.
		CO4	Make clear distinctions among spectrometric, electro-analytical, thermal and microscopic methods.
		CO5	Gain knowledge pertaining to the appropriate instrumental techniques.
		CO6	Obtain the practical experience in selected instrumental methods of analysis.
		CO7	Develop the skills on instrumental methods for planning, developing, conducting, reviewing, conducting experimentsand reporting results.
Analytical Chemistry Practicals	21CHD50	CO1	Get experience on analysis of various complex mixtures by following multistep reactions.
		CO2	Acquire the knowledge on handling instruments and to overcome the general problems arises during the analysis.
		CO3	Acquire industrial skills required for sampling, analytical and interpretation and presentation of results.
		CO4	Possess adequate knowledge on literature search for developed analytical methods.
Inorganic Chemistry	21CHD51	CO1	Determination of alloy samples and understanding the electrochemical deposition of metals.

Practicals		CO2	Preparation and characterization of coordination compounds.
		CO3	Determination of composition, stability constant and magnetic susceptibility of metal complexes.
Organic Chemistry Practicals	21CHD52	CO1	The isolation of caffeine, carotene, lycopene, cincole, azelaic acid and piperine from respective natural sources.
		CO2	Estimation of ketones, sugars, nitro and amino groups in natural products.
		CO3	Interpret UV, IR, NMR and MS data of different organic compounds.
Physical Chemistry Practical	21CHD53	CO1	Students can able to develop experimental skill and interpretation of plausible mechanisms of reactions.
		CO2	Gain practical knowledge on the theoretical basis of electrochemistry, thermodynamics, and spectrophotometry experiments.
		CO3	This helps in academics, research and industries.
Dissertation/ Project Work	21CHD54	CO1	Carry out literature survey on the problem/s to be solved.
		CO2	Learn and follow suitable research methodologies to propose and to perform Experiments.
		CO3	Attain the state of ability to take up research work.
		CO4	Better understanding about research articles, patents, book chapters or books on relevant research problem.
		CO5	Acquire skills of writing research reports in the form of articles or thesis.