

Sri Jagadguru Renukacharya Education Society® ಎಸ್. ಜಿ.ಆರ್. ವಿಜ್ಞಾನ, ಕಲಾ ಮತ್ತು ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ

**College of Science, Arts and Commerce** 

Affiliated to Bengaluru City University & NAACAccredited Institution #9, Race Course Road, Ananda Rao Circle, Bengaluru – 560 009 Phone: 080-22264952 E-mail: principal@sjrc.edu.inWebsite: www.sjrc.edu.in

# 2.6.1: Programme Outcomes (POs) and Course

## **Outcomes (COs) for all Programmes offered by the**

## Institution

#### #9, Race Course Road, Bangalore - 560 009

## **Department of History**

## Programme Outcome, Programme Specific Outcome, And Course Outcome

## **B.A (Regular) Degree**

Programme outcome	• The students seeking admission for Arts as a
	• The students seeking admission for Arts as a course/Programma acquire knowledge in the field of
	Social Science, Humanitias and Literature
	The Students of Humanities last to acquire the
	• The Students of Humanities learn to acquire the
	knowledge with human values framing the base to
	deal with various problems in life with courage and
	humanity
	• The Programme also empowers the students to appear
	for various competitive examinations.
	• It enables them to choose any post-graduation courses
	and like Law course, education courses and later for
	the research activities to take up.
	• Sense of Social Science and Creative ability.
Program specific outcome	• Understand background of our religion, customs,
	practices, Administration, Policy etc
	• Understand the present existing social, political,
	religious, economic and spiritual conditions of the
	people.
	• Learn the Lessons from the past mistakes and
	rectifying the same.
	• The study of History helps to impart moral education.
	• History imbibes patriotism among the students.
Cou	irse Outcomes
	I Semester
PAPER - I : History of Ancient India.	• Introtruction to Ancient Litrature, inscriptions,
	coins,monunuments.
	• Stonage, Harappan culture, excavations, Script, town
	planning.
	• Vedas, Upanishads, Mahakavyas, Coronation
	ceremony, position of Women, Religious approaches.
	• Mahajanapadas, various guilds, Heterodox,
	contributions.
	• The Kingdoms Magadha, Maurya, Arthashastra,
	Rajaneeth, Damma.
]	II Semester
PAPER - II : Early Medieval India	• The Gupta period, Golden age, Development of
	Science and Tecnology, Vardhanas, Huan Tsang
	Chaliukyas and Pallavas, clash of the Titans
	Pallavas – Mahaballipuram
	• Chalukyas – Badami, Iiwale, Pattadakal

	• Rastrakutas – Kavirajamarga, Kailasanatha temple.
	• Relion – Bhakthi Movement,
	Chola's Contributions.
Ι	II Semester
PAPER - III : Medieval India – 1206- 1707	• Establishment of Slave Dynasty, consolidation of
CE	Power.
	• The Khilijs – Economic and Market reforms.
	Bhakthi movement and Sufism Religion.
	• The Mughals; contribution of power, Sur dynasty,
	• Akbar; Relion, Revenues, MansabdariSytem, mixed
	economy, society.
	• Shivaji – Astapradanas (His style of Administration)
I	V Semester
PAPER – IV : Modern Indian Histroy	Advent of Europeans
	• The battles that chaged the course of History of India.
	• British contributions to Judiciary, Transport,
	Comminications, Company.
	Indian Renaissance.
	• The Acts : Contributions to framing the Constitution.
	Gandhi: Tools of Freedom.
	V Semester
PAPER - V: Modern Europe up to 1945CE	• The Great discoveries, the Renaissance, - the religious
	reforms.
	• The Bloodless revolutions, contribution to industry,
	expansion.
	• The Mother of all revolutions -1789, the rise of the
	great Leader.
	• The Unification Movement: Inspiration for the
	freedom.
	• The Great wars and the great organizations, the
	Dictators and the Impacts.
<b>N</b>	/I Semester
PAPER - VI : History of Karnataka	• Formation of the State: The great empire and Dynasties
	Society and Economy – Contributions
	• The cultural revolutions.
	• The era of revolt and power and resistance, restoration
	of the power of the Wodeyars.
	The National Movements
PAPER – VII : Bangalore in time and space	Introducing Bangalore.
	Beginning of the Historical Period.
	Towards Major Transition.
	Towards Modern Bangalore.
	• Development of Science and Technology.
	• To understand the historical and political divisions of
	Bangalore.
	• To trace the major dynasties which contributed to the

	growth of Bangalore.
	• To understand the transformation of Bangalore from
	rural culture to urbanisation.
PAPER –VIII : Select Debates in Indian	• Indian Antiquity. Dravidian and Aryan Civilisation.
History	• Emergence of Heterodox religion.
	• The Golden Age concepts.
	• Forms of Nationalism.
	• Debates on Medium of Instructions.
	• At the end students should understand the antiquity of
	India and the great civilisations.
	• To understand the Heterodox religion.
	<ul> <li>To analyse the forms of nationalism</li> </ul>
NEP SVI	LABUS 2021-2022
Programma autoama	• The students seeking admission for Arts as a
	• The students seeking admission for Arts as a course/Programme acquire knowledge in the field of
	Social Science, Humanities and Literature
	• The Students of Humanities learn to acquire the
	• The Students of Human values framing the base to
	deal with various problems in life with courage and
	humanity
	• The Programme also approvers the students to appear
	for various competitive examinations
	• It analogs them to choose any post graduation courses
	• It enables them to choose any post-graduation courses,
	activities to take up
	<ul> <li>Sense of Social Science and Creative ability</li> </ul>
Programma specific outcome	• Sense of Social Science and Creative ability.
r rogramme specific outcome	• Understand background of our rengion, customs,
	Eamiliarize Indian History and Culture
	<ul> <li>Function to analyze further development of Culture of</li> </ul>
	India
	<ul> <li>The study of History helps to impart moral education</li> </ul>
	<ul> <li>Study the complexities involved in polity of the time.</li> </ul>
	• Study the complexities involved in pointy of the time.
	• Learn to Collect and preserve the artefacts.
	• Understand the concept "unity in diversity"
	• Understand the concept of cultural heritage of
	Karnataka.
Cor	urse Outcome
	I Semester
Paper –I : Political History of Karnataka	• Introduction – Survey of Sources, Saptanga theory,
(BCE-300 to CE-1000) Part-1	Rituals and Sacrifices.
	• Early Beginnings.
	Pre-Medieval Powers.
	• Understand the rise and fall of Political Dynasties in
	Karnataka.
	• Understand the Administrative system of ancient
	Karnataka.

PAPER –II : Cultural Heritage of India.	<ul> <li>Introduction - Meaning, Historical Cultural Heritage, significance of fairs and festivals and pilgrimage centres of India.</li> <li>legends, Narratives and Cultural Ethos.</li> <li>Architecture and Built Heritage.</li> <li>Familiarise Indian History and Culture.</li> <li>Analyse the factors responsible for origin and decline of Culture.</li> <li>Provides the opportunity to understand the process of cultural development.</li> </ul>
]	I Semester
Paper – III : Political History of Karnataka (1000CE to 1750CE)	<ul> <li>Introduction- Kalachuris of Kalyana, Hoysalas, Yadavas.</li> <li>Medieval Karnataka.</li> <li>Post Vijayanagar.</li> <li>Analyse the traditional values and ethos of political development.</li> <li>Study the complexities involved in polity of the time.</li> <li>Familiarise with the pattern on administration.</li> </ul>
Paper –IV : Cultural Heritage of Karnataka	<ul> <li>Karnataka Cultural Heritage and Introduction.</li> <li>Fairs, Festivals and rituals.</li> <li>Traditional Art and Architecture and Cultural Ethos.</li> <li>Understand the concept of Cultural Heritage of</li> <li>Karnataka.</li> <li>Study various cultural factors which influence the flow</li> <li>of culture.</li> <li>Understand the concept of 'unity in diversity'</li> </ul>

#### #9, Race Course Road, Bangalore - 560 009

## **Department of Economics**

## Programme Outcome, Programme Specific Outcome, And Course Outcome

## **B.A (Regular) Degree**

Programme Outcome	<ul> <li>The students understand the society and acquire knowledge in the field of socio economic factors and literature</li> <li>The student of humanities learn to acquire the knowledge with human values and basic economical problems in the society.</li> <li>The programme also empowers the students to appear for various competitive examinations and students can take up B ED courses.</li> </ul>
	<ul> <li>It enables them to choose any post graduation courses, law course and research activities to take</li> </ul>
	up. Sonse of socio economia service and erectivity
Programme Specific Autcome	• It halps the students to learn aconomics
Programme Specific Outcome	<ul> <li>It helps the students to learn economics, particularly its applications and faster the development of their own skills in economic reasoning and understanding.</li> <li>Acquaint with some basic mathematical methods to be applied in economics.</li> <li>Acquaint with some basic theoretical concepts of public finance.</li> <li>It helps to understand the economy in stability.</li> <li>It helps us understand the functioning of a complicated modern economic system. It helps to achieve the goal of economic growth, a higher GDP level and higher level of employment. It helps to bring stability in price level and analysis fluctuations in business activities.</li> </ul>
Course	Outcome
I Ser	nester
Micro Economics	<ul> <li>Meaning, types, limitations, basic economic problems, production possibility curve.</li> <li>Utility meaning ordinal and cardinal, Law of diminishing marginal utility, consumers surplus Indifference curve meaning and properties.</li> <li>Demand and supply Law of Demand, Elasticity of demand price, income and cross elasticity, Law of supply, supply curve, elasticity of supply.</li> <li>Production decisions, Production function, Law of production. Nature of Markets, Revenue Analysis.</li> </ul>
	• Theory of Distribution, money wages, classical

	and the Keynesian theory, Profit, Gross and net
	profit
II Ser	mester
Public Economics	• Meaning scope of public economics and objectives, capitalist, socialist and mixed
	economy. Role of public and private sector.
	• Meaning and scope of public expenditure, causes and effects, Wagner's hypothesis.
	• Source of public revenue, taxation, canons and classifications.
	• Meaning of public debt sources of public
	borrowing, classification of public debt, public
	Meaning of fixed policy chiesting instruments
	• Meaning of fiscal policy, objectives, instruments.
	budget types of budget. Zero have budgeting
	advantages and limitations
III So	advantages and minitations.
Corporate Economics	• Introduction, meaning, hature and characteristics
	management and importance
	Corporate planning magning nature objectives
	types of corporate plans Corporate budget
	allocation
	Human Resource Management meaning HRM-
	objectives HRM-HR manager Risk management
	human resource planning- methods of recruitment
	of human resource- problems involved in
	placement.
	• Corporate Business and globalization
	introduction globalization and forces: meaning
	and definition Multinational corporations. Nature
	and significance of MNCs- TATA RELIANCE
	INFOSYS WIPRO KINGFISHER BIOCON-
	Future of corporate sector in india.
	• Corporate social responsibility introduction
	meaning of CSR- Approaches. Ethical
	consumerism, ethics training social awareness and
	education. Recent social security measures under
	corporate world.
IV Se	mester
Rural development and co-operation	• Introduction to rural development meaning nature
	scope and importance, problem of rural sector,
	rural poverty- causes-poverty alleviation
	schemes national rural water supply schemes
	Issues in rural development Agriculture.
	productivity- PURA and PDS
	• Financing rural development- credit needs of rural

	population. NABARD, Grameena banks.
	operation and economic development.
	• Agricultural and non agricultural co- operatives,
	co-operative agricultural marketing. NABARD,
	Types of credit- district union of farmers service
	societies-Decentralised credit planning
NEP SYLLA	BUS 2021-2022
Programme Outcome (PO)	• The students of BA (Hons) is imbibed with
	realisation of human values, becomes a
	responsible and dutiful citizen, a sense of social
	service and develops a critical temper and creative
	Upon completion of the BA Degree programme
	the graduate will be able to:
	• understand and analyze the fundamental concept
	of economics and economic behaviour in practice
	a. Equip and learn the economic practices in
	local, national and international needs.
	b. Apply supply and demand analysis to
	examine the impact of government
	regulation.
Programma Spacific Outcoma	The students understand the basis concents in
r rogramme specific Outcome	• The students understand the basic concepts in Economics and can apply them in the real world
	He or she is also updated with the recent trends in
	the subjects.
	• The student also builds a sound base for various
	post graduate courses in economics and related
	fields.
	• Upon completion of these courses the student
	would;
	a. De able to adopt an evaluate economic models to solve accommic problems
	b Be able to acquire more knowledge on
	national and international trade
	c Be able to analyze the economic problems
	and suggest policy measures for the
	development of the economy
	Be able to acquire the entrepreneurial skills and
	become successful entrepreneurs
Course	Outcome
I Ser	nester
Basic Economics -1	• Meaning types, basic economic problems and
	types of economic systems
	• Define the market demand and supply and
	concept of elasticity of demand and supply.
	• Describe the awareness of different markets

	structure like perfect competition, oligopoly and
	duopoly.
	• Identifying the nature of revenue and cost of
	production and clarifying the meaning of
	marginal, average, total revenue and marginal,
	average and total costs and its implication.
Contemporary Indian Economy – Paper II	• Understand the current problems of Indian
	Economy.
	• Identify the factors contributing to the recent
	growth of the Indian Economy.
	• Evaluate impact of LPG policies on economic
	growth in India.
	• Analyze the sector specific policies adopted for
	achieving the aspirational goals.
II Ser	mester
<b>Basic Economics – II - Paper III</b>	• Identify the facts of an economic problem.
	• Learn basic economic concepts and terms.
	• Explain the operation of a market system;
	• Analyse the production and cost relationships of a
	business firm;
	• Evaluate the pricing decisions under different
	market structures; and use basic cost-benefit
	calculations as a means of decision making (i.e.,
	thinking like an economist).
Karnataka Economy - Paper – IV	• Understand the nature of economic growth and
	problems of Karnataka state.
	• Explain the process of structural growth in
	Karnataka economy;
	• Evaluate the policies and programmes undertaken
	by the Govt. of Karnataka for bringing about
OFC.	socio-economic development.
OEC	• Trace the evolution of Indian Economy.
Pre-reforms Indian Economy	• Identify the structural features and constraints of
	the Indian economy.
	• Evaluate planning model and strategy adopted in
	• Analyze the sector specific problems and
	contributions towards overall economic growth
	• Review various economic policies adopted.

#### #9, Race Course Road, Bangalore - 560 009

#### **Department of English**

## Programme Outcome, Programme Specific Outcome, and Course Outcome

## **L2 - GENERIC ENGLISH**

	Course Outcome
	I Semester
Course Objective	To develop literary sensibility
	• To expose students to different genres
	• To inculcate social responsibility
	• To be aware of social problems
Course Outcomes	By the end of the semester the students will have
	• Acquire the LSRW (Listening, Speaking, Reading, Writing) skills
	• Acquire the skills of creativity to express one's
	experiences
	• Be aware of their social responsibilities
	• Develop their ability as critical readers and writers
	• Increase their reading speed
	• Increase their analytical skills.
	II Semester
Course Objective	• To revise, revisit and update basic grammar
	<ul> <li>To deepen vocabulary in use</li> </ul>
	<ul> <li>To deepen vocabulary in use</li> <li>To cultivate practicion in thinking and writing</li> </ul>
	<ul> <li>To entirvate precision in uninking and writing</li> <li>To activate the young adult learner to social concerns.</li> </ul>
	and contexts
Course Outcomes	By the end of the semester the students will have
	• acquire awareness on current affairs
	<ul> <li>Social issues</li> </ul>
	• Impact of globalisation
	Discrimination
	• Migration
	Indian Diaspora Writing skills with different
	dimensions
	• Letter writing
	• Report writing
	Academic writing
	III Semester
Course Objectives	• To enhance LSRW (Listening, Speaking, Reading,
U	Writing) skills
	• To critically analyze, interpret and appreciate literary
	texts
	• To sensitize about social, cultural, religious and ethnic

	diversities
	• To facilitate preparation for competitive examinations
	-
	UPSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS
	and others.
Course Outcomes	At the end of the course the students will have
	• Acquired enhanced LSRW (Listening, Speaking,
	Reading, Writing) skills
	• Ability to critically analyse, interpret texts
	• An awareness of social, cultural, religious and ethnic
	diversities
	• Acquired language skills for competitive examinations
	- PSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS
	and others.
	V Semester
Course Objectives	• To enhance the students' creative, interpretative and critical thinking
	• To build persuasive and creative social media writing
	skills
	• To develop analytical and evaluative skills
	• To train students to identify and understand regional
	and global contexts and ethical frameworks in texts
	and narratives
	To enable students for self-expression
Course Outcomes	By the end of the course the students will have
	• Acquired creative, interpretative and critical tranking
	• Obtained persuasive and creative social media writing
	<ul> <li>Skills</li> <li>Developed analytical and evaluative skills</li> </ul>
	<ul> <li>Developed analytical and evaluative skills.</li> <li>Learnt to identify and understand social contexts and</li> </ul>
	• Learnt to identify and understand social contexts and ethical frameworks in the texts
NFP SVI	LABUS 2021-2022
	I Semester
Course Objective	To develop literary sensibility
Course Objective	To develop metally sensibility     To expose students to different control
	To expose students to different genies     To insulate acciel responsibility
	<ul> <li>To incurcate social responsionity</li> <li>To be aware of social problems</li> </ul>
	• To be aware of social problems
Course Outcomes	By the end of the semester the students will have
	• Acquire the ISRW (Listening Speaking Reading
	Writing) skills
	Learn to appreciate literary art
	<ul> <li>Obtain the knowledge of literary devices and genres</li> </ul>
	• Acquire the skills of creativity to every one's
	experiences
	<ul> <li>Know how to use digital learning tools</li> </ul>

	• Be aware of their social responsibilities .
	• Develop their ability as critical readers and writers
	• Increase their reading speed .
	• Be able to give presentations .
	• Increase their analytical skills.
]	II Semester
Course Objective	• To revise, revisit and update basic grammar
U U	components.
	To refine Basic Communication Skills
	<ul> <li>To deepen vocabulary in use</li> </ul>
	• To cultivate precision in thinking and writing
	<ul> <li>To provide learning cues for competitive exams</li> </ul>
	• To activate the young adult learner to social concerns
	and contexts
Course Outcomes	By the end of the semester the students will have
Course Outcomes	• acquire awareness on current affairs
	Social issues
	<ul> <li>Impact of globalisation</li> </ul>
	Discrimination
	Migration
	Indian Disspore Writing skills with different
	dimensions
	Letter writing
	• Report writing
г	• Academic writing
1 Course Objectives	I Semester
Course Objectives	• To enhance LSKW (Listening, Speaking, Reading, Writing) skills
	• To develop interpersonal communicative skills
	<ul> <li>To augment presentation skills</li> </ul>
	• To critically analyze interpret and appreciate literary
	texts
	• To sensitize about social, cultural, religious and ethnic
	diversities
	• To enable employability in emerging sectors such as –
	content writers interpreters translators transcribes
	• To facilitate preparation for competitive examinations
	UPSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS
	and others.
Course Outcomes	At the end of the course the students will have
	• Acquired enhanced LSRW (Listening, Speaking,
	Reading, Writing) skills.
	• Equipped themselves with interpersonal
	communication skills.

<ul> <li>Ability to critically analyse, interpret and appreciate literary texts .</li> <li>An awareness of social, cultural, religious and ethnic diversities.</li> <li>Facilitated employability in emerging sectors such as – content writers, interpreters, translators, transcribes.</li> <li>Acquired language skills for competitive examinations - PSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.</li> </ul>
<ul> <li>literary texts .</li> <li>An awareness of social, cultural, religious and ethnic diversities.</li> <li>Facilitated employability in emerging sectors such as – content writers, interpreters, translators, transcribes.</li> <li>Acquired language skills for competitive examinations - PSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.</li> </ul>
<ul> <li>An awareness of social, cultural, religious and ethnic diversities.</li> <li>Facilitated employability in emerging sectors such as – content writers, interpreters, translators, transcribes.</li> <li>Acquired language skills for competitive examinations - PSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.</li> </ul>
<ul> <li>diversities.</li> <li>Facilitated employability in emerging sectors such as <ul> <li>content writers, interpreters, translators, transcribes.</li> </ul> </li> <li>Acquired language skills for competitive examinations <ul> <li>PSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.</li> </ul> </li> </ul>
<ul> <li>Facilitated employability in emerging sectors such as – content writers, interpreters, translators, transcribes.</li> <li>Acquired language skills for competitive examinations - PSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.</li> </ul>
<ul> <li>content writers, interpreters, translators, transcribes.</li> <li>Acquired language skills for competitive examinations</li> <li>PSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.</li> </ul>
<ul> <li>Acquired language skills for competitive examinations</li> <li>PSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.</li> </ul>
- PSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.
and others.
IV Semester
• To enhance the students' creative, interpretative and
critical thinking.
• To equip the students to communicate confidently and effectively.
• To prepare for various interviews and professional
contexts .
• To build persuasive and creative social media writing
skills .
• To develop analytical and evaluative skills.
• To train students to identify and understand regional
and global contexts and ethical frameworks in texts
and narratives .
To enable students for self-expression.
Course OutcomesBy the end of the course the students will have
• Acquired creative, interpretative and critical thinking.
Skills to communicate confidently and effectively
Obtained persuasive and creative social media writing
skills.
• Developed analytical and evaluative skills.
• Learnt to identify and understand social contexts and athias! from superks in the taxts
Ability to articulate their views with elerity and
• Addity to articulate their views with clarity and
• Eligibility to take up jobs such as content writing
iournalism and such other jobs with proficiency in
English
English – Open Elective I Semester
Functional English Grammar And Study Skills
<b>Course Objectives</b> • To enhance LSRW (Listening, Speaking, Reading,
Writing) skills
• To develop interpersonal communicative skills
• To augment presentation skills
• To critically analyze, interpret and appreciate literary

	texts
	• To sensitize about social, cultural, religious and ethnic
	diversities
	• 6. To enable employability in emerging sectors such
	as – content writers, interpreters, translators,
	transcribers
Course Outcomes	By the end of the programme the student would be able
	to
	• Identify and understand the different parts of speech in
	English.
	Develop competence in English
	• Identify and correct common grammatical errors.
	• Frame appropriate sentences.
	• Identify errors in the use of tenses and have an
	awareness of errors in subject-verb agreement.
	• Talk about the past, present and future using suitable
	expressions and structures.
	• Communicate effectively in different social situations.
English – Op	en Elective II Semester
Critical Thinki	ing And Creative Writing
Course Objectives	• To horn students' creative skills
	• To improve their imagination skills.
Course Outcomes	By the end of the programme the student would be able
	to
	• Learn the history of poetry
	• Become familiar with the components and devices of
	the genre
	• Develop the skill of critical analysis and interpretation.
	Decision making skills
	Critical thinking

#### #9, Race Course Road, Bangalore - 560 009

#### **Department Of Sanskrit**

## Programme Outcome, Programme Specific Outcome, and Course Outcome

## Language Sanskrit

Course Outcome		
I Semester BA/B	Sc/BCom/BBA/BCA	
Padya Kavya and Grammar	Origin and development Kavya	
	Pancha mahakavyas	
	• Features of Mahakavya in detail through the study	
	of Raghuvamsa and other Mahakavyas	
	• Moral values among students through the study of	
	Subhashitas.	
	Undersatand the basic principles of grammar.	
II Semester BA/BSc/BCom/BBA/BCA		
Gadya Kavya and Grammar	• Awareness of Sanskrit prose literature.	
	• Origin and development of Gadya Kavya.	
	• Awareness of Sanskrit tales and fables.	
	• Moral values among the students through the study	
	of Panchatantra and Hitopadesha.	
	Understand the basic principles of grammar.	
III Semester BA/	BSc/BCom/BBA/BCA	
Champu Kavya and other treatises	• Origin and development of Champu Kavya.	
	• Champu Ramayana helps students understand the	
	Ramayana.	
	Knowledge of Pancha Champu Kavyas.	
	• Enjoy the blend of Gadya and Padya.	
	• Knowledge of Bhagavadgeeta, Smruti text	
	Arthashastra .	
IV Semester BA/	BSc/BCom/BBA/BCA	
Nataka and introduction of other Dramatists	• Origin and development of Sanskrit Nataka.	
	• To enact ekanka nataka.	
	• Understand the features of the Natakas of Bhasa.	
	• Appreciate Kalidasa's Abhijnana Shakuntala and	
	other works.	
	• Evaluate the Sanskrit Theater.	
	Create the ability to write in Sanskrit Language.	

#### #9, Race Course Road, Bangalore - 560 009

## **Department Of Physics**

## Programme Outcome, Programme Specific Outcome, And Course Outcome

#### **B.Sc. (Regular) Degree**

Program Outcome	<ul> <li>B. Sc. serves as a foundation for candidates who have a keen interest to build a career in the field of Science.</li> <li>The purpose of the undergraduate B. Sc. program is to provide the basic concepts in Physics, Chemistry and Mathematics and various laboratory resources.</li> <li>Students will be able to explore new areas of research in Physics, Chemistry and Mathematics and allied fields of science and technology.</li> <li>The Program prepares the students for careers and as professionals in the field of Physics, Chemistry and Mathematics.</li> <li>The program inculcates, Observation skills, Analytical skills, Scientific skills, Experimental skills, Problem- solving skills, Logical skills and Pascarch skills</li> </ul>
Program Specific Outcome	At the end of the Programme, graduating
	students/graduates will
	• Learn the core concepts of Physics in details.
	• Acquire analytical and logical skill for higher
	Education and research in Physics.
	• They are trained to take up jobs in allied fields.
~	• Develop confidence to take up competitive exams.
Coi	irse Outcome
Machanica	Semester
Mechanics	• Basic understanding of gravitational force, Newtons law of gravitation, Kepler's laws of planetary motion and satellite motion.
	• Basic knowledge about frictional forces and their
	significance
	• Gain knowledge about the basic concepts of Special
	theory of Relativity, Length Contraction, Time
	dialation, Variation of mass with velocity, Energy
	• Enhance problem solving skill in in Machanics
	• Emilance problem solving skin in millivectanics.
Kinetic Theory Of Gases And	• Gain knowledge about the basic concepts of Heat and
Thermodynamics	Temperature
	• Facilitate the students to learn laws of
	thermodynamics and the importance of applications of
	Thermodynamics
	• Basic knowledge about the low temperature Physics.

	• Enrich the knowledge about theory of gases.
	• Gain knowledge about Black Body Radiation and
	pyrheliometry.
I	III Semester
Elecrticity And Magenetism	• Gain knowledge about the basic concepts in electricity
	• Enrich their knowledge in different properties of
	magnetic materials
	• Facilitate the students to learn the importance of
	magnetostatic phenomenon.
	• Basic knowledge about the magnetic effects of electric
	current.
	• Basic understanding about the concepts in
	fundamentals of LCR circuits
	• Fundamentals of thermo electricity and their
	applications.
1	IV Semester
Wave Optics, Laser, Optical Fibres	• Facilitate the students to learn wave nature of light.
	• To explore the students to know about Interference
	concepts, fundamentals of diffraction and basics of
	polarization.
	• Facilitate the students to know the theory and
	application of lasers
	• Helps the student to know the resolving power of
	optical instruments
	• Basic understanding of optic fibres and their
	applications.
Statistical Physics	• The students are expected to learn some methometical
	• The students are expected to learn some mamematical techniques required to understand the physical
	nhenomena
	• To know the difference between classical & quantum
	statistics
	• This course will introduce the students to different
	aspects of classical mechanics
	V Semester
Quantum Mechanics	• Enrich their knowledge about Wave Properties of
	Matter.
	• Basic knowledge about the Schrödinger's Wave
	Equation.
	• Setting up Schrodinger's wave equation for simple
	cases and obtaining Energy Eigen values
	• Facilitate the students to learn the importance of
	Uncertainty Principle
	• Basic understanding about the fundamentals of
	Spherical Symmetrical system
	V Semester

Nanomaterials	• Basic knowledge about Nanomaterials their synthesis.
	• Basic understanding about the structure of
	nanoparticles and their distinct particles.
	• Characterisation techniques of nanoparticles using
	Scanning Electron Microscope, Transmission Electron
	Microscope and Atomic Force Microscope.
	• Application of nanomaterials in various fields.
	V Semester
Astrophysics	• Basic knowledge about stellar distances, luminosity
	and brightness of stars.
	• Understanding of Stellar classifications
	• Basic understanding of stellar temperature, pressure
	and hydrostatic equilibrium.
	• Understanding of evolution of stars.
	V Semester
Solidstate Physics	• Gain knowledge about the basic concepts in Crystals
	and their Structural properties.
	• Enrich their knowledge about Band theory of Solids.
	• Facilitate the students to learn the importance of
	magnetic properties of materials.
	• Basic knowledge about the Electron theory of metals.
	• Basic understanding about the fundamentals
	Dielectrics
	V Semester
Semiconductor Physics, Electronics And	• Gain knowledge about the basic concepts of
Digital Electronics	Semiconductors.
	• Enrich their knowledge about special diodes and
	Transistors.
	• Facilitate the students to learn the importance of
	Rectifiers and amplifiers.
	• Basic knowledge about the concept of Feedback
	Oscillators.
	• Basic understanding about the fundamentals and
	applications of OP AMPs.
	V Somostor
Digital Electronics	• Gain knowledge about the basic concents of Number
	Systems and Logic Gates
	• Enrich their knowledge about Boolean Algebra and
	• Einfelt their Knowledge about Boolean Algebra and Simplification of Logic Expressions
	Fundamental knowledge of basic logic setes
	Fundamental Knowledge of Dasic Togic gates.     Eacilitate the students to learn the immerity of
	• Facilitate the students to learn the importance of
	Combinational logic gates.
x	/I Somoston
	• Enrich their knowledge about the structure of the
Atomic And Molecular Physics	

	Atom and atomic models.
	• Facilitate the students to learn the importance of
	atomic and molecular spectrum.
	• Enrich knowledge about scattering of light
	• Basic knowledge about the Raman Effect and its
	applications.
V	/I Semester
Nuclear Physics	• Gain knowledge about the basic concepts of
	Introduction to Nucleus
	• Enrich their knowledge about Detector and Particle
	accelerator.
	• Facilitate the students to learn the importance of
	Radioactivity.
	• Basic knowledge about the concept of Nuclear fission
	and fusion reaction.
	• Basic understanding about the fundamentals of
	Elementary particles.
NEP SYI	LLABUS 2021-2022
Course Outcome	
Program Outcome	• B. Sc serves as a foundation for candidates who have a
	keen interest to build a career in the field of Science.
	• The purpose of the undergraduate B. Sc. program is to
	provide the basic concepts in Physics, Chemistry and
	Mathematics and various laboratory resources.
	• Students will be able to explore new areas of research
	in Physics, Chemistry and Mathematics and allied
	fields of science and technology.
	• The Program prepares the students for careers and as
	professionals in the field of Physics, Chemistry and
	Mathematics.
	• The program inculcates, Observation skills, Analytical
	skills, Scientific skills, Experimental skills, Problem-
	solving skills, Logical skills and Research skills.

	At the end of the Programme, graduating
Program Specific Outcome	students/graduates will
	• Learn the core concepts of Physics in details.
	•Learn, design and perform experiments in the
	laboratory to demonstrate the concepts, principle and
	theories learned in the classrooms.
	• Develop the ability to apply the knowledge acquired in
	the classroom and laboratories to specific problems in
	theoretical and experimental physics.
	• Acquire analytical and logical skill for higher Education
	and research in Physics.
	• Expose the students to the vast scope of Physics as a
	theoretical and experimental science with the
	applications in solving most of the problems in nature
	spanning from $10^{-10}$ to $10^{26}$ m in space and $10^{-10}$ eV to $10^{25}$ eV. IN energy dimensions
	• To emphasize the importance of Physics as the most
	important discipline for sustaining the existing
	industries and establishing new ones to create the job
	opportunities at all levels of employment.
	• Develop confidence to take up competitive exams.
	I Semester
Mechanics and properties of matter	• Fixing units tabulation of observations and analysis of
	data.
	• Accuracy of measurement and source of errors,
	importance of significant figures.
	• Knowledge of determination of acceleration due to
	gravity experimentally.
	• Understanding the difference between simple and
	torsional pendulum and their use in determination of
	various physical parameters.
	• Knowledge of how various elastic moduli can be
	determined.
	• Measuring surface tension and viscosity and appreciate
	the methods adopted.
	Hands-on experience on different equipment.
Flectricity and Magnetism	• Demonstration Gauss laws Coulomb's law for electric
Electricity and Magnetism	field and apply it to system of point charges as well as
	line surface and volume distribution of charges
	• Explain and differentiate the vector (electric fields
	Coulomb's law) and scalar (electric potential, electric
	potential energy)
	• Apply Gauss law of electrostatics to solve variety of
	problems.
	• Describe the magnetic field produced by magnetic

	dipoles and electric current.
	• Explain Faraday's law, Lenz's law and Maxwell's laws
	to articulate the relationship between electric and
	magnetic field.
	• Describe how magnetism is produced.
	<ul> <li>Application of Kirchhoff's law.</li> </ul>
	Knowledge of various network theorem such as
	superposition theorem. Thevenin's theorem,
	Reciprocity theorem, Maximum power transfer
	theorem and their applications in electronics and
	electrical circuit analysis and electrical mechanics
	III Semester
Wave motion and optics	• Identification of different types of waves and their
	characteristics.
	• Formulation of wave equation and obtain the
	expression for different parameter associated with the
	Waves.
	• Explanation and mathematical treatment of superposition of waves.
	• Formation of standing waves ,mathematical model in
	the case of stretched string and vibrations of a rod
	given
	• Analytical treatment of resonance in case of open and
	closed pipes
	• Study of acoustics in a building
	• Different models of light propagation and
	phenomenon associated.
	• Measurement of wavelength of light using Michelson
	interferometer.
	Interference and interference in thin films.

#9, Race Course Road, Bangalore - 560 009

#### **Department Of Chemistry**

#### Programme Outcome, Programme Specific Outcome, And Course Outcome

#### **B.Sc. (Regular) Degree**

The Department of Chemistry provides research platform for students planning careers in the subject. The curriculum of the chemistry is designed to satisfy the diverse needs of the students. The objective of the department is, 'the education should be knowledge-based and skills-based'. At the end of the course, the Students should be able to master a broad set of chemical knowledge concerning the fundamentals in the basic areas.

Programme outcome (PO)	After successful completion of three year degree program in
	Chemistry a student should be able to;
	• Demonstrate, solve and an understanding of major concepts
	in all disciplines of chemistry.
	• Solve the problem and also think methodically,
	independently and draw a logical conclusion.
	• Employ critical thinking and the scientific knowledge to
	design, carry out, record and analyze the results of chemical
	reactions.
	• Create an awareness of the impact of chemistry on the
	environment, society, and development outside the scientific
	community.
	• Find out the green route for chemical reaction for sustainable
	development.
	• To inculcate the scientific temperament in the students and
	outside the scientific community.
	• Use modern techniques, decent equipments and Chemistry
	software's
Programme Specific outcome (PSO)	• Chemistry Students should be able to solve problems
	competently by identifying the essential parts of a problem and
	formulating a strategy for solving the problem. They will be
	able to rationally estimate the solution to a problem, apply
	appropriate techniques to arrive at a solution, test the
	correctness of the solution, and interpret their results.
	• Students should understand the objective of their chemical
	experiments, properly carry out the experiments, and
	appropriately record and analyze the results.
	• Students should be able to use standard laboratory
	equipment, modern instrumentation, and classical techniques
	to carry out experiments.
	• Students should know and follow the proper procedures and
	regulations for safe handling and use of chemicals.
	• Students should be able to communicate the concepts and

	results of their laboratory experiments through effective
	writing and oral communication skills.
	• To explain nomenclature, stereochemistry, structures,
	reactivity,
	and mechanism of the chemical reactions
	• Identify chemical formulae and solve numerical problems
	• Understand good laboratory practices and safety.
	• Develop research oriented skills.
	• Understanding the working principle and method of handling
	the sophisticated instruments/equipments.
Course	outcome for BSc Chemistry
	Semester – I (Paper I)
Unit-I	• Understanding the structure of atom based on various
	theories, principles that govern the electron distribution
	around nucleus. The students will learn to calculate the
	radius and energy of orbitals. Learn to draw angular and
	radial distribution curves for various orbitals. Gain the
	knowledge of quantum numbers and their significance,
	stability of half-filled and completely filled orbitals and
	anomalous electronic configuration.
	• Learn types of bonds with examples. Learn to construct
	Born_Haber cycle and to calculate lattice energy of ionic
	compounds. Learn different types of hybridization and
	geometry of molecules based on hybridization with
	examples. Learn shapes of molecules based on VB and MO
	theory. Learn how to determine bond order, magnetic
	property, stability etc. based on MO diagrams.
Unit-II	• Acquire the knowledge of some basics of organic reactions
	such as bond cleavage, types of intermediates and their
	structure and stability. Also understand various electronic
	factors which influence stability as a result, the reactivity.
	Also learn types or organic reactions with examples.
	• Organic compounds exhibit isomerism. The students learn
	some basics of isomerism, their types with examples. Also
	learn conformational isomerism in alkanes and cycloalkanes
	with energy profile diagrams of isomers.
	• Understand the methods of preparation or synthesis of
	alkanes, alkenes and alkynes, their reactions including
	mechanism and significance of certain reactions.
	• Learn aromaticity anti-aromaticity and non-aromaticity of
	organic compounds. Understand mechanism of electrophilic
	substitution reactions of benzene and substituted benzene
	Understand Orienting influence of groups in substituted
	benzene.
Semester – II (Paper II)	
Unit – I	• Learn the laws of thermodynamics. relation between
	different forms of energy, calculation of bond energy and
	bond dissociation energy. Understand the efficiency of heat

	<ul><li>engine.</li><li>Acquire knowledge of Free energy and its relation to</li></ul>
	<ul> <li>equilibrium constant. Learn Le-chatelier's principle.</li> <li>Understand the concept of strong and weak electrolytes, hydrolysis of salts, calculation of hydrolysis constant. Learn about buffers and Henderson's equation, solubility product and its application.</li> </ul>
Unit – II	<ul> <li>Understand the methods of preparation of alkyl and aryl halide, their properties and synthetic application. Learn reaction mechanisms and reactivity.</li> <li>Learn synthetic application of organometallic compounds.</li> </ul>
	<ul> <li>Learn synthetic application of organometanic compounds.</li> <li>Acquire the knowledge of preparation and properties of alcohols, phenols, ethers and epoxides.</li> </ul>
	• Study industrial application of phenol in synthesis of certain drugs.
	The experiments include preparation and purification of different organic compounds wherein the students will learn laboratory scale preparation and purification of compounds by simple methods.
Se	mester – III (Paper III)
Unit – I	<ul> <li>Acquire the knowledge of ideal and non-ideal solutions. Rault's law, separation of liquids from mixture, and Nernst distribution law and its application.</li> <li>Learn phase rule, phase diagram of one and two components systems involving eutectics points.</li> </ul>
	<ul> <li>Understand molar and equivalent conductivity, Kohlrauch law and its application. Understand the method of determination of transference number by different methods.</li> <li>Study different types of cells, determination of EMF, pH determination using different electrodes.</li> </ul>
Unit – II	<ul> <li>Understand preparation and synthesis of aldehydes and ketones by different methods, study reactions of both aldehydes and ketones with mechanisms.</li> <li>Study different types of carboxylic acids and their and their</li></ul>
	<ul> <li>derivatives and their preparations, reactions with mechanism, relative strength of acids.</li> <li>Learn different types of amines, their preparation, properties</li> </ul>
	and synthetic applications
	• Carbohydrates are the major source of energy. Students
	learn the chemistry of carbohydrates in terms of definition,
	elucidation of structure of glucose.
	The experiments include qualitative analysis of a mixture
	two inorganic salts. The students will learn the techniques of
Se	emester –IV (Paper IV)
50	moster it (i uper it)

Unit – I	• Learn Ellingham diagram of oxides and its application in metallurgy. Study the methods of extraction of Uranium, thorium ato
	• Study powder metallurgy and its application along with
	production of W powder.
	• Study electronic configuration, valency and oxidation
	number, magnetic and catalytic properties of transition
	elements.
	• Understand the theories of coordination compounds along
	with isomerism in complex compounds.
Unit – II	Study kinetic theory of gases, gas laws, Maxwell's distribution
	laws, different kinds of velocities and their inter-relation.
	• Learn methods of determination of viscosity and surface
	tension.
	• Study symmetry of elements, types of lattice, laws crystallography, interpretation of x-ray diffraction and
	defects in crystals.
	• Understand the theories of reaction rates and comparison of
	different theories. Concept of steady state approximation
	different experimental methods like flash photolysis and
	shock tube method
	<ul> <li>Solving the problems and their applications</li> </ul>
	The experiments include determination of physical constants
	such as density, viscosity, surface tension, transition
	temperature, molar mass etc. also learn the method of
	determining rate constants of certain reactions and
	determination of percentage composition of binary liquid
	mixture by viscosity method.
S	emester –V (Paper V)
Unit – I	• Study interaction of EMR with matter. Study Rotation,
	vibrational spectroscopy, Raman, electronic, NMR and ESR
	structure of molecules
	<ul> <li>Learn laws of photochemistry and photochemical reactions</li> </ul>
	and their role
Unit – II	• Learn the methods of sampling, evaluation of data, and
	statistical test of data.
	• Understand the principle and instrumentation of TGA.
	Quantitative estimation of Ca & Mg.
	• Understand the principle of pH metric, conductometric and
	potentiometric itirations, determination of equivalence point,
	• Understand principle and methodology of separation and
	purification of compounds by different solvent extraction
	and chromatographic techniques.
	The instrumentation experiments include conductometric,

	potentiometric and pH metric estimations and
	determinations of pKa of acids. The students will learn the
	technique of use of simple instruments in quantifying the
	compounds.
Se	emester –V (Paper VI)
Unit – I	• Understand the contribution of various scientists for the
	development of biochemistry and also the role of water as
	solvent of life.
	• Understand energetics of biochemical reactions, how energy
	rich molecules are produced in organisms.
	• Learn the role of different vitamins and their deficiency
	syndromes
	• Enzymes are biological catalysts. Students learn the types of
	enzymes and their mechanism of action along with the
	<ul> <li>Nucleic acids are genetic meterials. Students will understand.</li> </ul>
	• Nucleic actus are genetic materials. Students will understand the chemistry of different nucleic acids and their structure
	and role.
	• Understand the flow of genetic information and gene
	expression.
	• Hormones regulate all physiological processes. Students will
	learn different types of hormones, their function and also
	glucose homeostasis.
Unit – II	• Understand classification and structure of carbohydrates,
	their derivatives, biological role.
	• Study the metabolism of carbohydrates which are primary
	Tuel molecules.
	• Learn different types of lipids, biological fole of grycefides,
	<ul> <li>Lipids are the major reserve source of energy and second.</li> </ul>
	important source of energy. Students will study how fatty
	acids are catabolised in cells releasing energy.
	• Understand the constitution and structure of proteins,
	reactions of amino acids and their significance.
	• Learn how proteins get metabolized in organisms. The
	experiments include estimation of biomolecules such as
	sugars, amino acids, vit-C, inorganic phosphate, creatinine
	etc. the students understand the estimation biomolecules by
	colorimetric method.
Sei Sei	nester – VI (Paper VII)
Unit – I	• Learn use and types of fertilizers, manufacture of some
	<ul> <li>Understand the manufacture of different types of class and</li> </ul>
	• Onderstand the manufacture of different types of glass and ceramics and their applications
	<ul> <li>Understand the purpose of surface coating and methods of</li> </ul>
	surface coating
	• Get a brief idea of preparation of some explosives and
	propellants

	• Learn different types of alloys, manufacture of steel,
	modification of properties of steel by heat treatment
Unit – II	• Understand synthesis of Nanomaterials, bioinorganic and
	bioorganic Nanomaterials.
	• Understand the synthesis and modification of inorganic
	solids by different methods.
	• Learn the method of production, storage and use of different
	industrial gases, inorganic chemicals.
	• Acquire the knowledge of different sources of energy and
	disposal of nuclear waste and it management.
	The experiments include preparation of complexes and
	estimation by complexometric titrations. The students will
	learn the method of preparation of different complexes by
	simple methods. They also learn to estimate certain
	compounds which involve the formation of complexes.
Sen	nester –VI (Paper VIII)
Unit – I	• Understand basic principle and application of spectroscopic
	techniques in the determination of functional groups in
	organic compounds viz., electronic, IR and NMR
	spectroscopy. Learn to interpret spectra.
	• Learn the concept of active methylene group and application
	of active methylene compounds.
	• Learn optical and geometrical isomerism, absolute and
	relative configuration of organic molecules, determination
	of isomers by different methods.
Unit – II	• Study classification of drugs and use of drugs with
	examples.
	• Understand the methods of preparation, structure, properties
	and application of different polymers.
	• Study the occurrence, structure and uses of different
	terpenes.
	• Learn general characteristics of alkaloids, structure and uses
	of some alkaloids.
	• Understand the chemistry of heterocyclic compounds, their
	aromaticity, and preparation and properties.
	• Understand the importance of green chemistry in keeping
	environment clean by applying the principles of green
	chemistry.
	The experiments include qualitative analysis of organic
	compounds. the students learn the art of determining the
	functional groups by experiments.
NEF	• SYLLABUS 2021-2022
Program Outcomes:	By the end of the program the students will be able to:
	• To create enthusiasm among students for Analytical
	chemistry and its application in various fields of life.
	• To provide students with broad and balanced knowledge and

	understanding of key concepts in Analytical chemistry
•	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.
•	To develop in students the ability to apply standard
	methodology to the solution of problems in chemistry
•	To provide students with knowledge and skill towards
	employment or higher education in chemistry or multi-
	disciplinary areas involving chemistry.
•	• To provide students with the ability to plan and carry out
	experiments independently and assess the significance of
	outcomes and to cater to the demands of chemical Industries
	of well-trained graduates.
•	To develop in students the ability to adapt and apply
	methodology to the solution of unfamiliar types of
	problems.
	To instill critical awareness of advances at the forefront of
	chemical sciences, to prepare students effectively tor
	professional employment or research degrees in chemical
	sciences and to develop an independent and responsible
	work etnics.
Cou	irse Outcomes (COs):
Cou	rrse Outcomes (COs): Semester I
Paper I	Semester I         At the end of the course the student should be able to:
Paper I	Semester I         At the end of the course the student should be able to:         Explain basic laboratory practices like calibration of
Paper I 4	semester I         Semester I         At the end of the course the student should be able to:         Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.
Paper I	Semester I         At the end of the course the student should be able to:         • Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.         • Prepare the solutions after calculating the required quantity
Paper I 4	semester I         Semester I         At the end of the course the student should be able to:         • Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.         • Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of
Paper I	Semester I         At the end of the course the student should be able to:         • Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.         • Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.
Paper I	Semester I         At the end of the course the student should be able to:         • Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.         • Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.         • Describe the limitations of Classical Mechanics which reagentized the development of Overture Mechanics
Cou Paper I	semester I         At the end of the course the student should be able to:         • Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.         • Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.         • Describe the limitations of Classical Mechanics which necessitated the development of Quantum Mechanics.         • Salue the Selve dinger's expetien to altrin years function
Paper I	semester I         At the end of the course the student should be able to:         • Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.         • Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.         • Describe the limitations of Classical Mechanics which necessitated the development of Quantum Mechanics.         • Solve the Schrodinger's equation to obtain wave function for a basic type of Potential in one dimension and predict the
Paper I	Semester I         At the end of the course the student should be able to:         • Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.         • Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.         • Describe the limitations of Classical Mechanics which necessitated the development of Quantum Mechanics.         • Solve the Schrodinger's equation to obtain wave function for a basic type of Potential in one dimension and predict the shapes of orbitals as well as probability Distributions
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Paper I	<ul> <li>Semester I</li> <li>At the end of the course the student should be able to:</li> <li>Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.</li> <li>Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.</li> <li>Describe the limitations of Classical Mechanics which necessitated the development of Quantum Mechanics.</li> <li>Solve the Schrodinger's equation to obtain wave function for a basic type of Potential in one dimension and predict the shapes of orbitals as well as probability Distributions</li> <li>To justify the need for quantum mechanical structure of atoms</li> </ul>
Paper I	Semester I         At the end of the course the student should be able to:         • Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.         • Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.         • Describe the limitations of Classical Mechanics which necessitated the development of Quantum Mechanics.         • Solve the Schrodinger's equation to obtain wave function for a basic type of Potential in one dimension and predict the shapes of orbitals as well as probability Distributions         • To justify the need for quantum mechanical structure of atoms.
Paper I 4	Semester I         At the end of the course the student should be able to:         • Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.         • Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.         • Describe the limitations of Classical Mechanics which necessitated the development of Quantum Mechanics.         • Solve the Schrodinger's equation to obtain wave function for a basic type of Potential in one dimension and predict the shapes of orbitals as well as probability Distributions         • To justify the need for quantum mechanical structure of atoms.         • Describe the periodicity in physical and chemical properties of elements in the Periodic table
Paper I	Semester I         At the end of the course the student should be able to:         • Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.         • Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.         • Describe the limitations of Classical Mechanics which necessitated the development of Quantum Mechanics.         • Solve the Schrodinger's equation to obtain wave function for a basic type of Potential in one dimension and predict the shapes of orbitals as well as probability Distributions         • To justify the need for quantum mechanical structure of atoms.         • Describe the periodicity in physical and chemical properties of elements in the Periodic table.
Cou Paper I / • • • • • • • • • • • • • • • • • • •	<ul> <li>Irse Outcomes (COs):</li> <li>Semester I</li> <li>At the end of the course the student should be able to: <ul> <li>Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.</li> <li>Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.</li> <li>Describe the limitations of Classical Mechanics which necessitated the development of Quantum Mechanics.</li> <li>Solve the Schrodinger's equation to obtain wave function for a basic type of Potential in one dimension and predict the shapes of orbitals as well as probability Distributions</li> <li>To justify the need for quantum mechanical structure of atoms.</li> <li>Describe the periodicity in physical and chemical properties of elements in the Periodic table.</li> <li>Explain the nature of bonding in organic compounds using concepts such as Conjugation, resonance, etc.</li> </ul> </li> </ul>
Paper I	<ul> <li>Irse Outcomes (COs):</li> <li>Semester I</li> <li>At the end of the course the student should be able to: <ul> <li>Explain basic laboratory practices like calibration of glassware, sampling, handling acids and safety precautions.</li> <li>Prepare the solutions after calculating the required quantity of salts in preparing the reagents/solutions and dilution of stock solution.</li> <li>Describe the limitations of Classical Mechanics which necessitated the development of Quantum Mechanics.</li> <li>Solve the Schrodinger's equation to obtain wave function for a basic type of Potential in one dimension and predict the shapes of orbitals as well as probability Distributions</li> <li>To justify the need for quantum mechanical structure of atoms.</li> <li>Describe the periodicity in physical and chemical properties of elements in the Periodic table.</li> <li>Explain the nature of bonding in organic compounds using concepts such as Conjugation, resonance, etc.</li> </ul> </li> </ul>
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	• To develop the ability to set-up apparatus, using the
	apparatus to collect data and analyze the data to determine
	the desired parameter or quantity
	• To impart skills of preparation of reagents/solutions from
	• To impart skins of preparation of reagents/solutions from
	• Quantum numbers and their necessity in explaining the
	atomic structure
	Shapes of different atomic orbitals
	• Historical development of periodic table.
	• Periodic properties viz. atomic radii, ionization energy,
	electronegativity etc.
	• To introduce the basic concepts of organic chemistry.
Course Specific Outcome:	On completion of the course the student will learn and be able to
	explain:
	• The concepts of chemical analysis, accuracy, precision and
	statistical data treatment.
	• Prepare the solutions after calculating the required quantity of
	salts in preparing the reagents/solutions and dilution of stock
	solution.
	• Quantum numbers and their necessity in explaining the atomic
	structure.
	• Shapes of different atomic orbitals.
	Historical development of periodic table.
	• Periodic properties viz. atomic radii, ionization energy,
	electronegativity etc.
	• The Concept of aromaticity, resonance, hyper conjugation, etc.
	• Understand the preparation of alkanes, alkenes and alkynes, their
	reactions, etc.
	• Understand the mechanism of nucleophilic, electrophilic reactions
	• Able to draw the energy profile diagrams
	• Able to explain the factors affecting the orientation during
	aromatic substitution reactions.
Practicals	
Course outcome:	At the end of this course, student should be able to:
	• Calibrate common laboratory glassware like pipette, burette
	and volumetric flask.
	• Conduct a variety of volumetric estimations such as acid-
	base, redox and iodometric titrations.
	• Purify/crystallize organic compounds by proper selection of
	suitable solvents.
	• Synthesize different organic compounds such as <i>p</i> -nitro
	acetanilide <i>m</i> -nitrobenzoic acid tribromonbenol
	dibenzalacetone etc. using conventional/green methods
Dout A Analytical Chamister	To proper the standard/working solutions from
Course objectives	• To prepare the standard/working solutions from source
Course objectives:	materials
	• To standardize the reagents and determination of analytes
	• To familiarize the student about filtration, drying,

	incineration and ignition of the precipitates.
Course specific outcome:	• The students will be able to learn how to handle the
	glassware, prepare and dilute solutions and perform the
	experiments with prepared reagents
	• The students will be able to determine the analyte through
	volumetric and gravimetric analysis and understand the
	chemistry involved in each method of analysis.
	• The students will be able to deduce the conversion factor
	based on stoichiometry and in turn use this value for
	calculation
PART- B: Organic Chemistry	• To get training on how to plan and execute single step
Course objective:	synthesis of small organic molecules.
	• To learn and get trained on how to purify a compound and
	to learn the crystallization techniques.
	• To learn how to calculate percentage yield and to record
	physical constant.
	• To understand the mechanism involved in the
	transformation.
Course specific outcome:	• Students gain the basic knowledge as how to select a solvent
	for crystallization of organic compounds and get trained as
	how to purify a compound.
	• Students would understand the mechanism behind the
	reaction and role of catalysts in enhancing reaction rate and
	yield.
	• Students would learn the importance of green methods over
	conventional methods.
	• The students would be exposed to the safety measures to be
	taken to conduct reactions in the laboratory. and also learn
	how to manage by products and disposal of waste.
	Open Elective-1
C	hemistry In Daily Life
Course outcomes:	At the end of this course, student should be able to:
	• Describe the analysis of important constituents in food items
	such as fat content in dairy products, caffeine in coffee/tea,
	methanol in alcoholic beverages, etc.
	• Give details of possible food additives, preservatives,
	colorants and adulterants commonly used in processed food.
	• Explain the nutritional aspects of macro and micronutrients,
	namely oils/fats and vitamins respectively.
	• Explain the chemistry of daily used products like
	soaps/detergents, batteries/fuel cells and polymers.
Course Objective:	• The objective of this paper is to equip the non-chemistry
	students with knowledge about chemistry of some of the
	products which are commonly used in daily life.
Course specific outcome:	After studying this paper the student would be able to:
course specific outcome.	

	• Describe the composition of the milk and dairy products.
	• Detect/determine the amount of caffeine, chicory in coffee
	and chloral hydrate in toddy.
	• Explain the preservatives used in food products and their
	effects and possible adulterants.
	• Acquire detailed information about the colorants used in food
	products.
	• Differentiate various vitamins, their sources and deficiencies.
	• Examine purity of the oils.
	• Explain how electrical energy is stored in batteries.
	• Classify commonly used polymers in our daily lives.
	Semester II
Analytical/Physical and Organic	At the end of the course the student should be able to:
Chemistry	• Explain the principles and concepts related to titrimetric
	analysis with reference to acid-base, precipitation and
	complexometric titrations.
	• Handling of toxic chemicals, concentrated acids and organic
	solvents and practice safety procedures.
	• Write the mechanisms of $S_N1$ and $S_N2$ reactions taking
	suitable examples.
	• Illustrate types of aromatic electrophilic and nucleophilic
	substitution reactions with examples.
	• Give a comprehensive description of the gaseous state in
	terms of molecular velocity, their distribution based on
	Maxwell-Boltzmann law, types of molecular velocities,
	molecular collision parameters, critical phenomena and
	liquefaction of gases.
	• Explain important properties of liquid state such as viscosity,
	surface tension, refraction and parachor by defining them
	and elaborating on their experimental determination.
	• Learn methods of determining molecular weights of solutes
	by measuring colligative properties and the concept of
	distribution law along with its applications.
	• Describe the crystalline state in detail using the terms unit
	cell, Bravias lattices, Miller indices, Crystal systems,
	symmetry elements and lattice planes.
Course Objectives:	• The concept of volumetric and gravimetric analysis and
	deducing the conversion factor for determination.
	• Handling of toxic chemicals, concentrated acids and organic
	solvents and practice safety procedures.
	• To make him familiarize with various states of matter.
	• To learn the calculation of lattice parameters.
	• To learn various theories of physical chemistry.
	• To understand how liquid state and its physical properties
	are related to temperature and pressure variation.

	• To develop the concept of solids, lattice parameters-its
	calculation, application of symmetry and solid
	characteristics of simple salts.
	• Understand the mechanism of nucleophilic, electrophilic
	reactions.
	• To understand the concept of aromaticity and Huckel rule.
	• To familiarize the student with nucleophilic and
	electrophilic substitution reactions in aliphatic and aromatic
	compounds.
Course specific outcome:	On completion of the course the students will learn and able to
Provide State Sta	explain
	• The concept of volumetric and gravimetric analysis and
	deducing the conversion factor for determination
	<ul> <li>Handling of toxic chemicals, concentrated acids and organic</li> </ul>
	solvents and practice safety procedures
	• The concepts of organic reactions and techniques of writing
	the movement of electrons bond breaking bond forming
	• Various theories of gases and their significance
	• The concert of surface tension, viscosity, refraction and its
	• The concept of surface tension, viscosity, feffaction and its
	Significance.
	• Different types of inquid crystals and their applications.
	• The concept of unit cell, symmetry elements, Nernst
	distribution law
PRAC	CTICALS-(SEMESTER II)
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PRAC Course Outcome PART-A (Inorganic Chemistry)	<ul> <li>CTICALS-(SEMESTER II)</li> <li>At the end of this course, student should be able to: <ul> <li>Estimate components in a mixture, nitrite in a water sample and hardness of water by volumetric.</li> <li>Estimate presence of nickel, barium and copper in solutions by gravimetric.</li> <li>Measure physical properties of a liquid such as density, viscosity, surface tension and refraction using specific instruments.</li> <li>Study the distribution phenomena of different systems and evaluate the Corresponding distribution coefficient.</li> </ul> </li> <li>To strengthen the concepts of mole and stoichiometry.</li> </ul>
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PRAC Course Outcome PART-A (Inorganic Chemistry) Course Objectives Course specific outcome PART -B (Physical Chemistry)	<ul> <li>CTICALS-(SEMESTER II)</li> <li>At the end of this course, student should be able to: <ul> <li>Estimate components in a mixture, nitrite in a water sample and hardness of water by volumetric.</li> <li>Estimate presence of nickel, barium and copper in solutions by gravimetric.</li> <li>Measure physical properties of a liquid such as density, viscosity, surface tension and refraction using specific instruments.</li> <li>Study the distribution phenomena of different systems and evaluate the Corresponding distribution coefficient.</li> </ul> </li> <li>To strengthen the concepts of mole and stoichiometry.</li> <li>To develop analytical skills of determination through titrimetry and Gravimetry.</li> <li>The student will learn</li> <li>To prepare standard solutions.</li> <li>Techniques like precipitation, filtration, drying and ignition.</li> <li>Various titrimetric techniques and gravimetric methods.</li> <li>Calculation on basis of mole concept and stoichiometry.</li> </ul>
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PRAC         Course Outcome         PART-A (Inorganic Chemistry)         Course Objectives         Course specific outcome         PART -B (Physical Chemistry)         Course Objectives:	<ul> <li>At the end of this course, student should be able to:</li> <li>Estimate components in a mixture, nitrite in a water sample and hardness of water by volumetric.</li> <li>Estimate presence of nickel, barium and copper in solutions by gravimetric.</li> <li>Measure physical properties of a liquid such as density, viscosity, surface tension and refraction using specific instruments.</li> <li>Study the distribution phenomena of different systems and evaluate the Corresponding distribution coefficient.</li> <li>To strengthen the concepts of mole and stoichiometry.</li> <li>To develop analytical skills of determination through titrimetry and Gravimetry.</li> <li>The student will learn</li> <li>To prepare standard solutions.</li> <li>Techniques like precipitation, filtration, drying and ignition.</li> <li>Various titrimetric techniques and gravimetric methods.</li> <li>Calculation on basis of mole concept and stoichiometry.</li> <li>To learn various techniques for the measurement of viscosity, surface tension and refractive index</li> <li>To study the effect of concentration on viscosity and surface</li> </ul>

	tension
	• To determine the composition of a liquid mixture by
	Refractometry
	• To calibrate and operate Abbe's Refractometer
	• To understand the concept of distribution coefficient and
	Nernst Distribution law
	The student will able to
Course specific outcome:	• Determine the density of liquids.
	• Understand how viscosity and surface tension of liquids
	vary with concentrations.
	• Determine the percentage composition of liquid mixtures
	using Abbe's Refractometer.
	• Explain the concept of distribution coefficient, and
	dissociation in a layer.
	• Describe the conditions required for liquefaction of gases.
	• Understand cooling effect of gas on adiabatic expansion.
	• Explain properties of liquids in terms of intermolecular
	attraction.
	Semester II
	OPEN ELECTIVE - 2
MOLECULES OF LIFE	• At the end of this course, student should be able to:
Course Outcomes:	• Describe the biomolecules, namely carbohydrates, amino
	acids, lipids and nucleic acids on the basis of their
	classification and structure.
	• Explain enzyme action, factors influencing enzyme action,
	co-enzymes and enzyme specificity.
	• Depict the action of drugs in biological systems based on
	Receptor theory, SAR studies and binding action of various
	groups.
	• Study the energy dynamics of biological systems in terms of
	calorific values of macronutrients, their metabolic pathways
	and ATP as energy currency.
Course Objective:	• To make the non-chemistry students aware of various
	biochemicals/biomolecules involved in various biological
	processes.
Course specific outcome:	After studying this paper, the student would be able to:
	• Acquire knowledge about different types of sugars and their
	chemical structures
	• Identify different types of amino acids and determine the
	structure of peptides.
	• Explain the actions of enzymes in our body and interpret
	<ul> <li>Deniet the importance of linids in the metabolism</li> </ul>
	<ul> <li>Depict the importance of inplus in the inetabolism.</li> <li>Differentiate DNA and DNA and their realization</li> </ul>
	<ul> <li>Differentiate KINA and DINA and their replication</li> <li>Evaluation of an analysis and black in the second second</li></ul>
	• Explain production of energy in our body.

#### #9, Race Course Road, Bangalore - 560 009

## **Department of Mathematics**

## Programme Outcome, Programme Specific Outcome, And Course Outcome

## **B.Sc (REGULAR) DEGREE**

Programme Outcome Programme Specific Outcome	<ul> <li>Science students are expected to gain basic knowledge in theory as well practical aspects in different subject areas which include Mathematics, Physics, Chemistry and to pursue multi and interdisciplinary career and higher education in future.</li> <li>Course explains the basic scientific principles and methods. It inculcates scientific and logical thinking.</li> <li>Brings in awareness about environmental issues.</li> <li>Programme is a stepping stone to the field of Information Technology.</li> <li>A graduate in Mathematics would have an upper hand in Logical Thinking, problem solving skills and Mathematical Aptitude, would could help students in facing various competitive examinations.</li> <li>After completion of graduation students would be able to apply basic skills in Algebra, Analytical Geometry, Calculus, Vector Calculus, Partial and Ordinary Differential Equations, Real and Complex Analysis, Numerical Techniques find its ways into various fields of theoretical and practical applications, both in higher education and Industry.</li> <li>Laboratory component like FOSS and other tools in Mathematics brings Mathematics and various other</li> </ul>
Cou	irse Outcomes
Matrix	<ul> <li>Relating matrix with a system of linear equations and rank of a matrix</li> <li>Rank of a matrix and solvability of asystem of linear equations</li> <li>Eigen values and Eigen vectors CO4: Cayley-Hamilton theorem</li> </ul>
Differential Calculus	<ul> <li>Higher order derivatives.</li> <li>Basics ofPartial Differentiation, Euler's theorem, Jacobian CO3: Curvature.</li> <li>Singular points CO5: Tracing of curves.</li> <li>ε - δ definition of Limits, continuity and differentiability.</li> <li>Mean value theorems CO8: Maxima and minima.</li> </ul>
integral Calculus	• Reduction formulae.

	• Leibnitz's Theorem.
	• Line, double and triple integration and applications.
	• Integral theorems.
Analytical Geometry	Angle between planes.
	Coplanarity of lines.
	• Shortest distance between two lines.
	• Sphere, right circular cone, right circular cylinder.
Group Theory	• Permutation group and Integers modulo n.
	• Order of an element and its properties.
	• Cyclic group and properties.
	• Coset decomposition, Lagrange's theorem.
	• Normal subgroups, Quotient group.
	• Homomorphism, fundamental theorem.
	• Permutation group, Caley's theorem.
Differential Equations	Solutions of ordinary differential equations of first
	order and first degree.
	• Equations of first order and higher degree.
	• Second and higher order ordinary linear differential
	equations with constant Coefficients.
	• Cauchy-Euler differential equation.
	• Simultaneous linear differential equations (two
	variables) with constant Coefficients.
	• Solutions of second order ordinary linear differential
	equations with variables Coefficients.
	• Total differential equations.
	• Simultaneous equations of the form $ax P = ay$
	<ul> <li>Q = u2 R CO9. Equations of First Order.</li> <li>Standard types of first order non-linear partial</li> </ul>
	differential equation
	<ul> <li>Second order linear partial differential equations in</li> </ul>
	two variables with constant Coefficients.
	• Heat and Wave equations
Real Analysis	• Sequences of Real Numbers-Convergence,
	Divergence, Oscillation.
	• Monotonic sequences.
	• Series of Real Numbers-Convergence, Divergence,
	Oscillation.
	• Geometric series, p-series.
	• Tests of convergence
	• Alternating series .
	• Summation of series.
	• Fourier series.
	• Laplace transform and its properties.
	• Heaviside function, Convolution theorem.
Dings Integnal Domains Fields	Inverse Laplace transforms.
Kings, integral Domains, rields	• Kings, Types of Kings, properties of rings.

	• Homomorphism, Fundamental Theorem of
	Homomorphism of Rings.
Vector Calculus	• Gradient of a scalar field.
	Maximum directional derivative.
	• Angle between two surfaces.
	• Divergence and curl of a vector field.
	• Laplacian of a scalar field.
Numerical Methods	• Finite differences.
	• Forward and backward interpolation.
	• Interpolation for unequal intervals.
	Numerical Integration.
	• Numerical solutions of algebraic and Transcendental
	equations.
	• Numerical solutions of non-Homogeneous system of
	linear algebraic equations.
	• Computation of largest Eigen value of a square matrix
	by power method.
	• Solutions of initial value problems for ordinary linear
	first order differential equations
Calculus of Variation	• Variation of a function, Euler's equation and its
	particular forms.
	• Geodesics, minimal surface of revolution, hanging
	chain, Brachistochrone problem.
	• Isoperimetric problems.
Linear Algebra	• Vector space.
	• linear independent and dependent vectors, Basis and
	dimension .
	• Linear transformations, Rank-Nullity theorem.
	• Matrix of a linear transformation .
	• Non-singular and singular linear transformations.
Complex Analysis	Complex numbers-Cartesian and polar form.
	• Limit, continuity and differentiability of a complex
	• function.
	Cauchy Riemann equations.
	• Harmonic function, Milne Thomson method.
	• Cauchy's Integral theorem, Liouville's theorem.
	Conformal transformation.
	• The bilinear transformation.
NEP SYI	LLABUS 2021-2022
Programme Outcomes	By the end of the program the students will be able to:
	• 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.
	• Communication Skills: Ability to communicate
	various mathematical concepts effectively using
	examples and their geometrical visualization. The
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	skills and knowledge gained in this program will lead
	to the proficiency in analytical reasoning which can be
	used for modelling and solving of real life problems.
	• Critical thinking and analytical reasoning. The
	students undergoing this programme acquire ability of
	critical thinking and logical reasoning and canability
	of manuficing and distinguishing the various aspects
	of recognizing and distinguishing the various aspects
	of real-life problems.
	• 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
	• Research related skills: The completing this
	programme develop the capability of inquiring about
	appropriate questions relating to the Mathematical
	concepts in different areas of Mathematics.
	• Information/digital Literacy: The completion of this
	programme will enable the learner to use appropriate
	software to solve system of algebraic equations and
	differential equations
	anterential equations.
	• Self – directed learning: The student completing this
	program will develop an ability of working
	independently and to make an in-depth study of
	various notions of Mathematics.
	• Moral and ethical awareness/reasoning:: The student
	completing this program will develop an ability to
	identify unethical behaviour such as fabrication,
	falsification or misinterpretation of data and adopting
	objectives, unbiased and truthful actions in all aspects
	of life in general and Mathematical studies in general.
	• Lifelong learning: This programme provides self-
	directed learning and lifelong learning skills. This
	programme helps the learner to think independently
	and develop algorithms and computational skills for
	solving real world problems
	A hility to normal advanced studies and reasonab in
	• Ability to peruse advanced studies and research in
~	pure and applied Mathematical sciences.
Cou	Se Outcomes
Algebra - Land Calculus - L	Demester This course will enable the students to
Aigeora - 1 anu Calculus - 1	Learn to find rank of a matrix
	<ul> <li>Solve the system of homogeneous and non.</li> </ul>
	homogeneous linear system of 'm' equations in' n'
	variables by using concept of rank of matrix finding

	eigenvalues and eigen vectors
	• be familiar with the techniques of finding nth
	derivatives of some standard functions
	• Identify and apply the intermediate value theorems
	and L'Hospital's rule.
	• learn partial differentiation, Jacobians and related
	<ul> <li>learn expansion of Taylor's and Maclaurin's series of</li> </ul>
	functions of 2 variables and maxima and minima of
	functions of 2 variables.
Cou	irse Outcomes
]	II Semester
Algebra - II and Calculus - II	This course will enable the students to
	• Recognize the mathematical objects called Groups.
	• Link the fundamental concepts of groups and
	symmetries of geometrical objects.
	• Explain the significance of the notions of cosets,
	normal subgroups and factor groups.
	• Learn the quotient groups, concepts of homomorphism isomorphism and properties related
	to isomorphism.
	• Learn solve problems related to angle between radius
	vector and tangent, angle between two curves.
	• Learn expressing the curves in pedal form, derivative
	of an arc
	• Learn the center of curvature, asymptotes, evolutes
	and envelops of the given curve
	• Learn the reduction formulae
	• Learn to find length of an arc, area of plane curves and
Car	surface area, volume of revolution
	II Semester
Ordinary Differential Equations and Real	This course will enable the students to:
	• Solve first-order non-linear differential equations and
Analysis – I	linear differential equations. • To model problems in
	nature using Ordinary Differential Equations.
	• Formulate differential equations for various
	mathematical models
	• Apply these techniques to solve and analyze various
	mathematical models.
	• Understand the fundamental properties of the real
	formal development of real analysis
	• Learn the concept of Convergence and Divergence of
	a sequence.
	• Able to handle and understand limits and their use in
	sequences, series, differentiation, and integration.
	• Apply the ratio, root, alternating series, and limit
	comparison tests for convergence and absolute
	convergence of an infinite series.
Cou	Irse Outcomes

I	II Semester
Partial Differential Equations and Integral	This course will enable the students to:
Transforms	• Formulate, classify and transform partial differential equations into canonical form.
	• Solve the partial differential equations of the first order and second order
	• Solve linear and non-linear partial differential equations using various methods; and apply these methods to solving some physical problems.
	<ul> <li>Able to take more courses on wave equation, heat equation and Laplace equation.</li> <li>Solve PDE by Laplace transforms.</li> </ul>

#### #9, Race Course Road, Bangalore - 560 009

### **Department Of Botnay**

# Programme Outcome, Programme Specific Outcome, And Course Outcome

# **B.Sc. (Regular) Degree**

Programme specific outcome	• Students gain analytical and technical skills related to
	plant science.
	• Knowledge of identification, classification and
	description of economic importance plants.
	• Student completing the course is able to understand
	different branches of botany such as cytology,
	genetics, embryology, evolution, morphology,
	anatomy, ecology.
	• Students will be familiarized with different type of
	lower and higher plants their evolution and economic
	importance.
	• Understand the applications of knowledge of genetic
	engineering tissue culture phytoremediation plant
	disease management and improvement programs.
	• Applies the knowledge in mushroom cultivation
	biofertz production horticulture practices.
	• Create awareness about conservation of biodiversity
	and sustainable development.
	• Perform short research projects tools and technique in
	plant science and develop scientific temperament and
	research attitude.
C0	urse outcome
Panar I + Diversity Of Non Veceylar Plants	Semester I
raper 1 : Diversity Of Non Vascular Flants-	• Understand the scope and branches of MB, acquired
Part1	microhes in biofertz, bio pesticides bioremediation
	merobes in biorettz, bio pesticides, bioremediation
	and biogas production
	<ul><li>and biogas production.</li><li>Recognizes and identify the disease caused by virus</li></ul>
	<ul><li>and biogas production.</li><li>Recognizes and identify the disease caused by virus, bacteria and pytoplasmic.</li></ul>
	<ul> <li>and biogas production.</li> <li>Recognizes and identify the disease caused by virus, bacteria and pytoplasmic.</li> <li>Identify different a legal forms by this external</li> </ul>
	<ul> <li>and biogas production.</li> <li>Recognizes and identify the disease caused by virus, bacteria and pytoplasmic.</li> <li>Identify different a legal forms by this external morphology and understands the life cycles.</li> </ul>
	<ul> <li>and biogas production.</li> <li>Recognizes and identify the disease caused by virus, bacteria and pytoplasmic.</li> <li>Identify different a legal forms by this external morphology and understands the life cycles.</li> <li>Understand the economic importance of bacteria</li> </ul>
	<ul> <li>and biogas production.</li> <li>Recognizes and identify the disease caused by virus, bacteria and pytoplasmic.</li> <li>Identify different a legal forms by this external morphology and understands the life cycles.</li> <li>Understand the economic importance of bacteria cyanobacteria and algae the field of Agri, Indus and</li> </ul>
	<ul> <li>and biogas production.</li> <li>Recognizes and identify the disease caused by virus, bacteria and pytoplasmic.</li> <li>Identify different a legal forms by this external morphology and understands the life cycles.</li> <li>Understand the economic importance of bacteria cyanobacteria and algae the field of Agri, Indus and medicine</li> </ul>
	<ul> <li>and biogas production.</li> <li>Recognizes and identify the disease caused by virus, bacteria and pytoplasmic.</li> <li>Identify different a legal forms by this external morphology and understands the life cycles.</li> <li>Understand the economic importance of bacteria cyanobacteria and algae the field of Agri, Indus and medicine</li> </ul>
S Paper II : Diversity Of Non-Vascular	<ul> <li>and biogas production.</li> <li>Recognizes and identify the disease caused by virus, bacteria and pytoplasmic.</li> <li>Identify different a legal forms by this external morphology and understands the life cycles.</li> <li>Understand the economic importance of bacteria cyanobacteria and algae the field of Agri, Indus and medicine</li> <li>Semester II</li> <li>Distinguish and classify fungi, lichens and their</li> </ul>
S Paper II : Diversity Of Non-Vascular Plants-Part-II	<ul> <li>and biogas production.</li> <li>Recognizes and identify the disease caused by virus, bacteria and pytoplasmic.</li> <li>Identify different a legal forms by this external morphology and understands the life cycles.</li> <li>Understand the economic importance of bacteria cyanobacteria and algae the field of Agri, Indus and medicine</li> <li>Semester II</li> <li>Distinguish and classify fungi, lichens and their economic importance.</li> </ul>
S Paper II : Diversity Of Non-Vascular Plants-Part-II	<ul> <li>and biogas production.</li> <li>Recognizes and identify the disease caused by virus, bacteria and pytoplasmic.</li> <li>Identify different a legal forms by this external morphology and understands the life cycles.</li> <li>Understand the economic importance of bacteria cyanobacteria and algae the field of Agri, Indus and medicine</li> <li>Semester II</li> <li>Distinguish and classify fungi, lichens and their economic importance.</li> <li>Recognises various diseases caused by fungi and draw</li> </ul>

	• Identifies the types of tissues and understand the
	importance of their form and functions in constituting
	plant body.
	• Location and identification of bryophyte as
	amphitrians half plant Kingdom.
S	emester III
Paper III : Pteridophytes, Paleobotany,	• Classify and identify first land vascular plants
Environmental Biology And	pteridophytes.
Phytogeography	• Examine the fossils and trace the origin and evolution
	of various plant groups learn about Geological Time
	Scale.
	• Understand the factors affecting plant communities
	technological adoption of plants in various betritets
	Create awareness about conservation of natural
	• Create awareness about conservation of natural resources and plant diversity
	<ul> <li>Discover phytogeographic regions of India and types</li> </ul>
	of vegetation in Karnataka
S	Semester IV
Paper IV : Gymnosperms And Embryology	• Classify and identify the naked seed plants
Of Angiosperms	gymnosperms and their adoption to wide range of
or ringiosperms	hatritats.
	• Understand the structure and development of
	microsporangium and megasporangium.
	• Understand the process of double fertz development of
	endosperm embryogeny and seed.
	• Gains Knowledge on gets acquired with tissue culture
	techniques and role of technology in taxonomy.
	Semester V
Paper V : Taxonomy And Economic Botany	• Recognises the major groups of flowering plants
	angiosperms an their phylogenetic relationship.
	• Identify the plants with their scientific homenclature understand tools and Tech to study taxonomy like
	herbarium BG Flora
	<ul> <li>Understand the underlying mechanism of using all the</li> </ul>
	characters as valid basicfor classifying plants
	• Distinguish Monocot and dicot families with specific
	example Identify and recognise different plants of
	economic importance parts used and of pulse wheels
	fibres oil yielding plants medicinal and aromatic
	spices.
	• Gain ethanobotanical knowledge which provide
	inform regarding the traditional use of plant wealth.
	Semester V
Paper VI : Molecular Biology, Genetic	• Explain the nature and replication of genetic material
	RNA in protein synthesis and regulation of genetic

Engineering, Biotechnology And Plant	action.
Physiology	• Understand the DNA technology application of
	genetic engineering in agriculture.
	• Understand and apply the principles of fermentation
	technology to produce alcohol and antibodies unreveal
	the mysterier plant life at microscopic and
	submicroscopic level and explains the functional
	aspects of plant body understand plant water
	relationship learn about various physical phenomena
	underlying various physiological processes.
	• Learn about absorption translocation and transpiration.
	• Understand the role played by mineral elements in
	plant life
Depart VII extelogy gapatics evolution and	• Understand structural organization and variations in
nlant breeding.	• Understand structural organisation and variations in chromosome.
Prant ar county.	• Understand the process of cell division Understand
	and describes mendelian interaction of genes linkage
	and sex determination and solves genetic problems.
	• knowledge about plant breeding methods to produce
	new superior varieties.
	• Understand The concept of evolution process of origin
	of life.
S	emester VII
Paper VIII plant phycology III	• Learns about properties and mechanism of enzyme
Paper VIII plant phycology III	• Learns about properties and mechanism of enzyme action.
Paper VIII plant phycology III	<ul> <li>Learns about properties and mechanism of enzyme action.</li> <li>Understand the process of N2 fixation synthesis of iterative action.</li> </ul>
Paper VIII plant phycology III	<ul> <li>Learns about properties and mechanism of enzyme action.</li> <li>Understand the process of N2 fixation synthesis of acids and N2 cycle.</li> </ul>
Paper VIII plant phycology III	<ul> <li>Learns about properties and mechanism of enzyme action.</li> <li>Understand the process of N2 fixation synthesis of acids and N2 cycle.</li> <li>Understand the process of photosynthesis and requiration</li> </ul>
Paper VIII plant phycology III	<ul> <li>Learns about properties and mechanism of enzyme action.</li> <li>Understand the process of N2 fixation synthesis of acids and N2 cycle.</li> <li>Understand the process of photosynthesis and respiration.</li> <li>Learn about growth Kinetic role of photosynthesis</li> </ul>
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Paper VIII plant phycology III NEP SYI	<ul> <li>Learns about properties and mechanism of enzyme action.</li> <li>Understand the process of N2 fixation synthesis of acids and N2 cycle.</li> <li>Understand the process of photosynthesis and respiration.</li> <li>Learn about growth Kinetic role of photosynthesis plant movements.</li> <li>Understand and secondary metabolites and their role in plant defence.</li> </ul>
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Paper VIII plant phycology III NEP SYI Programme Outcomes	<ul> <li>Learns about properties and mechanism of enzyme action.</li> <li>Understand the process of N2 fixation synthesis of acids and N2 cycle.</li> <li>Understand the process of photosynthesis and respiration.</li> <li>Learn about growth Kinetic role of photosynthesis plant movements.</li> <li>Understand and secondary metabolites and their role in plant defence.</li> <li>LABUS 2021-2022</li> <li>By the end of the program the students will be able to :</li> <li>Skill development for the proper description using botanical terms, identification, naming and classification of life forms especially plants and microbes.</li> <li>Acquisition of knowledge on structure, life cycle and life processes that exist among plant and microbial</li> </ul>
Paper VIII plant phycology III NEP SYI Programme Outcomes	<ul> <li>Learns about properties and mechanism of enzyme action.</li> <li>Understand the process of N2 fixation synthesis of acids and N2 cycle.</li> <li>Understand the process of photosynthesis and respiration.</li> <li>Learn about growth Kinetic role of photosynthesis plant movements.</li> <li>Understand and secondary metabolites and their role in plant defence.</li> <li>LABUS 2021-2022</li> <li>By the end of the program the students will be able to :</li> <li>Skill development for the proper description using botanical terms, identification, naming and classification of life forms especially plants and microbes.</li> <li>Acquisition of knowledge on structure, life cycle and life processes that exist among plant and microbial diversity through certain model organism studies.</li> </ul>
Paper VIII plant phycology III NEP SYI Programme Outcomes	<ul> <li>Learns about properties and mechanism of enzyme action.</li> <li>Understand the process of N2 fixation synthesis of acids and N2 cycle.</li> <li>Understand the process of photosynthesis and respiration.</li> <li>Learn about growth Kinetic role of photosynthesis plant movements.</li> <li>Understand and secondary metabolites and their role in plant defence.</li> <li>LABUS 2021-2022</li> <li>By the end of the program the students will be able to :</li> <li>Skill development for the proper description using botanical terms, identification, naming and classification of life forms especially plants and microbes.</li> <li>Acquisition of knowledge on structure, life cycle and life processes that exist among plant and microbial diversity through certain model organism studies.</li> </ul>

<ul> <li>Understanding of the major elements of variation that exist in the living world through</li> <li>comparative morphological and anatomical study.</li> <li>Ability to explain the diversity and evolution based on the empirical evidences in morphology, anatomy, embryology, physiology, biochemistry, molecular biology and life history.</li> <li>Skill development for the collection, preservation and recording of information after observation and analysis from simple illustration to molecular database</li> </ul>
<ul> <li>exist in the living world through</li> <li>comparative morphological and anatomical study.</li> <li>Ability to explain the diversity and evolution based on the empirical evidences in morphology, anatomy, embryology, physiology, biochemistry, molecular biology and life history.</li> <li>Skill development for the collection, preservation and recording of information after observation and analysis from simple illustration to molecular detendes.</li> </ul>
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<ul> <li>Ability to explain the diversity and evolution based on the empirical evidences in morphology, anatomy, embryology, physiology, biochemistry, molecular biology and life history.</li> <li>Skill development for the collection, preservation and recording of information after observation and analysis from simple illustration to molecular database</li> </ul>
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<ul> <li>embryology, physiology, biochemistry, molecular biology and life history.</li> <li>Skill development for the collection, preservation and recording of information after observation and analysis from simple illustration to molecular database</li> </ul>
<ul> <li>biology and life history.</li> <li>Skill development for the collection, preservation and recording of information after observation and analysis from simple illustration to molecular database</li> </ul>
• Skill development for the collection, preservation and recording of information after observation and analysis from simple illustration to molecular database
recording of information after observation and
analysis from simple illustration to molecular database
analysis from simple musuation to molecular database
development.
• Making aware of the scientific and technological
advancements, Information and Communication,
Biotechnology and Molecular Biology for further
learning and research in all branches of Botany.
• Internalization of the concept of conservation and
evolution through the channel of spirit of inquiry.
• To enable the graduates prepare for national as well as
UGC-CSIR LIPSC and KPSC etc
• To enable the students for practicing the best teaching
pedagogy as a biology teacher including the latest
digital modules.
• The graduates should be knowledgeable and
competent enough to appropriately deliver on aspects
of global importance like climate change, SDGs, green
technologies etc., at the right opportunity.
• The graduates should be able to demonstrate sufficient
proficiency in the hands – on experimental techniques
for their area of specialization within biology during
research and in the professional career.
Course Outcomes
Semester I
• Understand the fascinating diversity, evolution, and
significance of microorganisms.
• Comprehend the systematic position structure,
physiology and life cycles of microbes and their
Gain laboratory skills such as microscony, microbial
• Gain laboratory skins such as incroscopy, incrobial cultures staining identification preservation of
microbes for their applications in research and
industry.
Semester II
<b>Diversity of Non Flowering Plants</b> • Understand the diversity and affinities among
Alage, Bryophytes, Pteridophytes and Gymnosperms.

	• Understand the morphology, anatomy, reproduction
	and life cycle of Alage, Bryophytes,
	Pterdophytes and Gymnosperms, and their ecological
	and evolutionary significance
	• Obtain laboratory skills , explore non flowering plants
	for their commercial applications.
Semester III	
Plant Anatomy and Developmental Biology	• Observation of variations that exists in internal
	structure of various parts of plants and as well as
	among different plant groups in support for the
	evolutionary concept.
	• Skill development for the proper description of
	internal structure using botanical terms, their
	identification and further classification.
	• Understanding the basic concepts in plant
	morphogenesis, embryology and organ development.

#### #9, Race Course Road, Bangalore - 560 009

## **Department Of Zoology**

# Programme Outcome, Programme Specific Outcome, And Course Outcome

### **B.Sc. (Regular) Degree**

Programme Outcome	• To provide the basic knowledge of zoology and the
	various laboratory instruments.
	• To develop interest in the basic working of life forms
	and the environment.
	• To create interest in taking up a profession in basic
	sciences and also research activities to help the society
	in general.
	• To apply the theoretical knowledge into practice in
	their daily activities.
	• To develop the skill of observation questioning,
	experimenting analysis, and deducing the results.
	• To have a scientific approach and to overcome the
	Superstitions. Programme Specific Outcome.
	• To learn in detail the basics of Zoology.
	• To acquire the observation and analytic skill which is
	much needed by the students of life sciences.
	• To develop minds towards exploring the new
	happenings in the scientific world.
	• To develop confidence to take a research activities
	competitive examinations and to explore the new
	branches in science.
Соц	irse Outcome.
	Semester I
Animal Architecture and Protozoa	• To know the meaning of the basic terminologies used
	in Zoology.
	• To know the basic organisation of the organisms.
	• To classify the protozoans and their functioning.
	• To understand the taxonomy of lower aquatic
	organisms and understand their unique features.
	• To study polymorphism, formations of coral reefs
	their types structure and economic importance.
Helminthes and Annelida	• To acquire the knowledge of worms to identify them
	and the diseases caused.
	• To understand the functioning of few important
	systems in Earthworm.
Parasitology and Economic Importance of	• To know the meaning of parasitism and its
Annelida	classification.
	• To understand some of the disease-causing common
	parasites.

	• To know about Vermi culture and vermi compost.
S	Semester II
Paper –II	• To understand the largest diversified group of animals.
	• To study the process of metamorphosis.
	• To understand the body organisation of prawn.
	• To study the soft bodied organism.
	• To study the working of few systems in Unio.
	• To study the classification of Echinoderms.
	• To study the various systems, structure and significance of their larvae.
	• To acquire the knowledge of Balanoglossus and its affinities to chordates
	• To acquire the knowledge of Sericulture Apiculture
	Prawn culture, Pearl culture, Pisciculture, Poultry and
	dairy.
	• To know about the possibilities of making a carrier in the above said fields
s	emester III
Paper – III	• To know the characters and classification of chordata
	to identify and differentiate them.
	• To inculcate the detailed knowledge of Chordata and
	their evolutionary trends in the development of
	various systems.
	• To have the knowledge of migration in fish
	• To understand the characters and classification of
	Amphibia, Reptilia and Aves.
	• To have a knowledge of endoskeleton of Frog.
	• To know about the evolution of reptiles and the
	diversification of dinosaurs.
	• To study the ancient fossil bird Archeopteryx as a
	connecting link between reptiles and apes.
	• To study the flight adaptations in Aves and their
	migratory behaviour.
	• To learn to differentiate between prototheria,
	Metatheria and Eutheria.
	• To study the structure and functioning of the organ
	systems in Frog.
S	Semester IV
Paper – IV	• To provide knowledge of the development of Organs
	and Organ systems and to understand the evolutionary
	trends from Fish to Mammal.
	• To study the Endoskeleton of humans- types of bones,
	joints, structure of Skull, Vertebral column, ribs,
	sternum and girdles.
	• To know the structure and functions of the organs of
	digestive system, lungs, heart, kidney and brain.

	• To study the structure and function of the eye and ear.
	• To understand the fluid mosaic model of cell
	membrane, its chemical composition role of lipids in
	maintaining the fluid nature of membrane, the
	functions of cell membrane.
	• To study the nucleus, cell cycle, and its regulation.
	• To understand the ultrastructure and the functions of
	the cell organelles.
	• To be knowledgeable about cancer cells, carcinogens
	and methods of treatment.
	• To study the immune system, types of immunity and
	various auto immune disease.
	• To have a scientific view to analyse the happenings in
	nature.
	• To study the histological structure of the organs and
	their functions.
	Semester V
Paper -V (Environmental Biology and	• To know the scopes of Ecology, concepts of Habitats
Ethology)	and Niche.
	• To understand flow the energy, Productivity,
	Population Ecology, interd2ependency of Organisms.
	• To study the current environmental issues and
	methods to adopt to overcome them.
	• To become aware of the Toxins used in the daily life and their effects on life forms
	• To learn to manage pasts. Energy Resources and Wild
	• To learn to manage pests, Energy Resources and wind
	• To understand the behaviour and communication in
	animals and Biological clocks.
Paper – VI (Genetics and Biotechnology)	• To have a knowledge of Genetics. Laws governing
	Inheritance, Genes, Genetic Disorders, Chromosomes,
	Syndromes.
	• To study structure of Genes. Gene mutations and
	mutagens.
	• To acquire the knowledge of Genetic Engineering, its
	tools, techniques and applications.
S	Semester VI
Paper – VII (Developmental Biology and	• To be knowledgeable about the types and patterns of
Evolutionary Biology )	development of eggs, process of fertilization,
	reproductive cycles.
	• To comparatively study the developmental processes
	in Amphioxus, Frog and Chick.
	• To know about the Organizers, Foetal membrane,
	Placenta and Parthenogenesis.
	• To understand the process of Evolution, evolutionary

	forces involved, evidences of organic evolution.
	• To study the evolution of man.
Paper – VIII (Animal Physiology and	• To acquire the knowledge of the functioning of
Techniques in Biology)	various systems.
	• To be aware of the functioning of Homeostasis
	Endocrinology
	Feedback Mechanism
	Osmoregulation
	• Thermoregulation
	• To study few common disorders in man.
	• To know the methods of Micro technique.
	• To understand the principles and applications of
	Immunoassay, Autoradiography, Micrometry,
	Endoscopy.
	• To know the types of Microscopes, their magnitude
	and resolution.
	• To study techniques of separation – Centrifugation,
NED SVI	Chromatography and Electrophoresis.
Programme Outcome	The Programme offers both classical as well as modern
	concepts of Zoology in higher education
	• It enables the students to study animal diversity in
	both local and global environments.
	• To make the study of animals more interesting and
	relevant to human studies more emphasis is given to
	branches like behavioural biology, evolutionary
	biology and economic Zoology.
	• More of upcoming areas in cell biology, genetics,
	molecular biology, biochemistry, genetic engineering
	and bioinformatics have also been included.
	• Equal importance is given to practical learning and presentation skills of students
	• The lab courses provide the students necessary skills
	required for their employability.
	• Skill enhancement courses in classical and applied
	branches of Zoology enhance enterprising skills of
	students.
	• The global practices in terms of academic standards
	and evaluation strategies.
	• Provides opportunity for the mobility of the student
	both within and across the world.
	• The uniform grading system will benefit the students
	to move across institutions within India to begin with
	and across countries.
	• It will also enable potential employers in assessing the

	performance of the candidates across the world.
Programme Specific Outcome	• To provide thorough knowledge about various
	sciences from primitive to highly evolued animal
	groups.
	• Understanding the morphology and functional
	characteristics at cellular, sub cellular( molecular) and
	organism level.
	• Explain various physiological changes in our bodies.
	• Explain the role and impart of different environmental
	conservation programmes.
	• Understand various genetic abnormalities and
	importance of genetic engineering.
	• Understand the application of biological sciences in various fields
	• Identify various potential risk factors to health of
	humans.
	• To develop the scientific temperment, problem solving
	attitude to promote learning and research aptitude to
	serve the society.
	• Pathological laboratory need technician for different
	analytical purposes and in forensic laboratory also
	need, so the student may be treated as key persons.
	• Make aware and handle the sophisticated
	instruments/equipments.
	• To inculcate interest and formation for further studies
	and research in zoology.
Co	urse outcome
Cytology Constics and Infectious Dissasses	• The structure and functions of animal call call
Cytology, Genetics and Infectious Diseases	• The structure and functions of animal cell, cell organelles cell, cell interactions process of
(4)	reproduction leading to new organisms.
	• The principles of inheritance. Mendel's laws and the
	deviations.
	• Inheritance of chromosomal aberrations
	• The structure and function of the cell organelles.
	• The chromatin structure and its location.
	• The basic principle of life, how a cell divides leading
	to the growth of an
	• Organism and reproduces to form a new organism.
	• How a cell communicates with its neighbouring cells?
	• The principles of inheritance, Mendel's laws and the
	deviations.
	• How environment plays an important role by
	interacting with genetic factors.
	• Detect chromosomal aberrations in humans and study

	of pedigree analysis.
OE1 (Open Elective Course)	• Acquaint the knowledge about basic procedure and
	methodology of integrated animal rearing.
Economic Zoology (3)	• Students can start their own business i.e. self-
	employments.
	• Get employment in different sectors of Applied
	Zoology
	• Gain knowledge about silkworms rearing and their
	products.
	• Gain knowledge in Bee keeping equipment and apiary
	management.
	• Acquaint knowledge on dairy animal management, the
	breeds and diseases of cattle and learn the testing of
	egg and milk quality.
	• Acquaint knowledge about the culture techniques of
	fish and poultry.
	• Acquaint the knowledge about basic procedure and
	methodology of Vermiculture.
	• Learn various concepts of lac cultivation.
	• Students can start their own business i.e. self-
	employments.
	• Get employment in different applied sectors
]	II Semester
<b>Biochemistry and Physiology</b> (4)	• In depth understanding of structure of biomolecules
	like proteins, lipids and carbohydrates.
	• The thermodynamics of enzyme catalysed reactions.
	• To know various physiological processes of animals.
	• How simple molecules together form complex
	macromolecules.
	• Mechanisms of energy production at cellular and molecular levels.
	• To understand various functional components of an
	organism.
	• To explore the complex network of these functional
	components.
	• To comprehend the regulatory mechanisms for
	maintenance of function in the body.
OE2 Open Elective)	• Acquaint the knowledge about the various parasites,
Parasitology(3)	adaptations and their life cycle.
	• To know about various pathogens caused by parasites.
1	
	• To gain knowledge on various medicines for the
	• To gain knowledge on various medicines for the diseases caused by parasites.
	<ul> <li>To gain knowledge on various medicines for the diseases caused by parasites.</li> <li>Know the stages of the life cycles of the parasites and</li> </ul>
	<ul> <li>To gain knowledge on various medicines for the diseases caused by parasites.</li> <li>Know the stages of the life cycles of the parasites and infective stages.</li> </ul>

	dynamics of parasite, establishment of parasite
	population in host body, adaptive radiations and
	methods adopted by parasite to combat with the host
	immune system.
	• Develop skills and realize significance of diagnosis of
	parasitic infection and treatment.
	• Understand about diseases caused by Protozoa,
	Helminthes, Nematodes and Arthropods at molecular
	level.
	Develop their future career in medical sciences and
	related administrative services.
III Semester	
Molecular Biology Bioinstrumentation &	• knowledge through the principles and applications of
Techniques in Biology (4)	certain useful biological techniques such as Micro
	technique, chromatography, and centrifugation.
	• Understand the principle and applications of
	Autoradiography, Micro technique and Endoscopy.
	Able to know about Immuno assay and separation
	techniques.

#### #9, Race Course Road, Bangalore - 560 009

### **Department Of Commerce**

# Programme Outcome, Programme Specific Outcome, And Course Outcome

### **B.Com (Regular) Degree**

Program Outcomes	• Inculcates and develops appropriate skills such as
	accounting, marketing, finance, entrepreneurship
	• Enables students to apply the knowledge of
	business and commerce in finding solution to
	complex organisational problems.
	• Imparts continuous learning through practical
	approach and development of professional skills
	relevant to trade and commerce.
	• Helps students to become more organised and
	systematic in every walk of life and also in
	business decisions while occupying higher
	positions in organisations.
	• Provides an understanding of business
	environment and sustainability and the way to
	provide solutions to demonstrate growth.
	• Makes the prospective graduates apply ethical
	principles and commitment to the profession they
	prefer to take up.
	• Encourages team work and effective
	communication.
	• Develops successful accounting and financial
	executives with creative and innovative skills,
	ethical and moral values.
Program Specific Outcomes	• Analytical Skills: Analyse and solve business and
	accounting related problems.
	• Skill Development: Apply business and
	accounting principles, tools and techniques to
	• Leadership Skills: Exhibit leadership qualities in
	individual as well as group dynamics
	<ul> <li>Communication Skills: Communicate effectively</li> </ul>
	on various issues with commerce community.
	• Socially Responsible Citizen: Enables
	identification and development of hidden talents,
	new ideas for better understanding of self and
	society and make students contributors to society
	and nation building.
	• Individual and Team Building Skills: Perform
	effectively as an individual and/or member in both general and specific domains
	boin general and specific domains.
	• Build public relations: Enhance student's

	capability in understanding, managing and
	sustaining public relations.
	• Soft Skills Development: To make the students
	aware of their own strengths and weaknesses,
	communicate effectively, maintain good
	interpersonal skills.
Course	Outcome
Sem	ester I
Financial Accounting	• Acts as a foundation for students which enables
	them to learn about further accounting papers in
	an organised and systematic way.
	• Helps students to know the importance of final
	accounts, basic analysis of financial statements,
	understanding the concept of Hire purchase
	system and also acts as a bridge to Industry and
	Academia.
Business Dynamics and Entrepreneurship	• Helps students to understand the conceptual
	framework of management and to know about the
	entrepreneurial culture and industrial growth to
	manage 21st century organizations.
	• Makes students perceive the dynamic nature of
	business, HR, and entrepreneurship and also
	creates awareness on various schemes on Indian
	government to help cope up entrepreneurship.
Indian Financial Institutions and Markets	• Exposure for students to conceptual framework of
	Indian Financial System, financial markets and
	regulatory authorities governing them.
	• Familiarizes students with roles and functions of
	banking and non-banking financial institutions,
	exposes them to domestic and international
	monetary systems and issues related to conversion
	of currencies.
Corporate Structure and Administration	• Familiarizes students with a thorough
-	understanding of Indian Companies Act 2013,
	formation and administration of companies
	according to the Act and different types of
	companies.
	• Enables the students to understand how the
	company raise capital by issue of shares and
	debentures.
	• Students get an idea on how meetings are
	conducted in a company and its proceedings and
	also understand the structure and administration
	of global companies.
Practical's on Skill Development	• Equip students with the practical knowledge about
-	hire purchase agreement and interest calculation,

	collection of transactions relating to branch
	account and departmental stores.
	• Familiarizes students with various organizational
	structures of companies and with the achievement
	of a few successful entrepreneurs.
	• Enables them to understand preparation of project
	report and format of business plan, and to know
	the process of PMKVV registration with PMKVV
	forms
	• Enchlos students to understand the structure of
	Endoies students to understand the structure of Indian Einangial System Commercial banks DDI
	and Einengial Markets and make them femiliar
	with drofts, shows with MICD to had been and
	with drafts, cheques with MICK technology and
	Figure 1 and
	• Enables students to understand dratting of
	Memorandum of Association and Articles of
	Association, Company meeting notice and
	exposes students to company's organisation
	structure and preparation of prospectus.
Seme	ester II
Advanced Financial Accounting	• Enables students get a conceptual understanding
	of requirements of d journal entries, Performa,
	ledger accounts to bridge the gap between real
	practices and academics.
	• Acquaints students with a few accounting
	standards and familiarizes them with accounting
	procedures for different types of business.
	• Enable the students to have a practical knowledge
	on Accounting required for the job.
Banking Operations and Innovations	• Familiarizes students with operations and
	innovations in banking sector.
	• Helps students comprehend the importance of
	banks as institutions that helps proper
	channelization of money into the economy and
	effective utilization through their primary and
	secondary functions.
	• Enable the students to get updated with latest
	banking Innovations.
Modern Marketing	• Enables students to understand the dynamics of
	marketing of products and services, marketing
	mix, digital marketing and its challenges.
	• Give an exposure to students to modern marketing
	which is about selling products as per consumer
	needs rather than sell what is produced.
	• To familiarize the students with Digital Marketing
	& Trends in Modern Marketing Techniques and

	helps to understand the various dimensions in
	Market and Consumer Behaviour.
Methods and Techniques for Business Data	• Equips students with basics of mathematics and
Analysis	develops analytical skills for solving practical
111111,010	problems.
	• Enables students solve quantitative problems
	related to commerce concepts such as Bill
	Discounting, Simple and Compound interest,
	Percentages, Annuities etc.
Practical on Skill Development	• Enables students get practical knowledge on
	claiming insurance, preparation of consignment
	account, drafting of joint venture agreements,
	collection and recording of royalty account.
	• Familiarizes students with applications of opening
	a bank account and obtaining bank loans, forms of
	RTGS, credit and debit cards and drafting
	specimens of travellers/gift cheque.
	• Helps students understand consumer behaviour in
	buying a product, development of strategies for
	new products, preparing advertisement copies and
	concepts of digital marketing.
	• Enables students apply mathematical concepts in
	analyzing business data and find solutions to
	various practical situations such as interest
	calculation for deposits and loans, preparation of
	matrices for railway reservation, CET counselling
	etc.
Seme	ster III
Corporate Accounting	• Helps students to understand the accounting
	requirements for a corporate group & be familiar
	with the methods of accounting for intercompany
	investments.
	• Helps students build practical knowledge about
	the maintenance of book of accounts in several
	conditions like valuation of share, goodwill and
	maintain company final accounts.
	• Enable students to have comprehensive awareness
	about the provision of Companies Act, Principles
	of Accounting and Corporate Accounts.
Financial Management	• Enable students to have in – depth view of
	process in Financial Management of the Firm.
	• Helps students to focus on critical elements of
	decision- making for organization, including
	variety of capital budgeting techniques, study of
	dividend policy and working capital management
	arritente poney and working capital management.

	• Introduces students to financial management and
	its application in practice and helps learners to
	understand the financial environment in which
Business Degulations	Creates on understanding of the Logal
Dusiness Regulations	• Creates an understanding of the Legar
	Environment of Business.
	• Enables students to apply basic legal knowledge
	to business transactions and communicate
	tarminalagy
	terminology.
Business Data Analysis	• Provides the basic knowledge about various
	quantitative statistical methods and its
	applicability for decision making in business.
	• Gives a practical exposure to students on the
	needs about research and various statistical
	concepts and provides students a brief insight on
	how statistical concepts such as correlation,
9	regression time series etc. are used in research.
Seme	ster IV
Advance Corporate Accounting	• Enables students to develop awareness about
	Corporate Accounting in conformity with
	provisions of Companies' Act, latest amendments
	and adoption of accounting standards.
	• Familiarizes students with practical
	implementation of accounting treatments followed
	by companies in redemption of preference shares,
	mergers and acquisitions.
Goods and Service Tax	• Equips students with the principles and provisions
	of Goods and Services Tax (GST), which was
	implemented from 2017 under the notion of One
	Nation, One Tax.
	• Provides an insight into practical aspects and how
	to apply the provisions of GST Laws to various
	situations.
Cost Accounting	• Acquaint students with various cost concepts and
	elements of cost essential for reducing and
	controlling overall cost which is a vital aspect in
	modern business.
	• Enables students to understand pricing material
	issues, labour remuneration, allocation and
	apportionment of overheads and also preparation
	of reconciliation statements.
E-business and Accounting	• Provides students with the conceptual knowledge
	about Online or Electronic business, marketing
	and payment mechanisms used by modern
	organisations and its legal framework.

	• Enables students gain practical knowledge about
	Tally which helps in maintaining accounts of
	business with the statutory features of tax.
Practical on Skill Development	<ul> <li>Enables students to get a comprehensive understanding of the advanced issues in accounting for Assets, Liabilities and owner's equity.</li> <li>Equip the students and provide a practical knowledge on GST concepts and learn how to</li> </ul>
	<ul> <li>apply the provisions of GS1 laws to various situations.</li> <li>Helps students get a detail understanding on</li> </ul>
	<ul> <li>ascertainment of cost, fixation of selling price, proper recoding and presentation of cost data to management for measuring efficiency, cost control and cost reduction and also for ascertaining the profit of each activity like assisting management in decision making</li> <li>Enables students to learn principle and concept of accountancy. Students learn the basic concept of partnership accounting and allied aspects of accounting practice prevailing in partnership firm and gives a depth knowledge on Electronic Business Accounting.</li> </ul>
Sem	ester V
Entrepreneurship Development	<ul> <li>Helps create entrepreneurial awareness among students and motivate them to develop a mind-set for choosing entrepreneurship as a career.</li> <li>Enables students to understand the influence of</li> </ul>
	identification of opportunities and preparation of business plan.
	<ul> <li>business environment on entrepreneurship, identification of opportunities and preparation of business plan.</li> <li>Develops Problem Solving and Identification Capability in students and gain the knowledge of preparing Business Plan</li> </ul>
International Financial Reporting Standards	<ul> <li>business environment on entrepreneurship, identification of opportunities and preparation of business plan.</li> <li>Develops Problem Solving and Identification Capability in students and gain the knowledge of preparing Business Plan</li> <li>Enables students to understand the need for convergence of Indian Accounting Standards with International Financial Reporting Standards (IFRS) due to globalization.</li> <li>Helps students to understand Ind Accounting Standards compliance by the companies in preparing and presenting their financial statements.</li> <li>Provides a common platform for better</li> </ul>

	• Better access to foreign capital markets.
Income Tax-I	• Familiarizes students to various provisions of
	Income Tax Act 1961 relating to Income of
	Individuals.
	• Helps students to assess the income tax of an
	individual according to Income Tax provisions.
	• Enable students to understand various concepts of
	Tax and the knowledge gained provides job
	opportunities.
Costing Methods	• Enables students to get an understanding of Cost
	Accounting concepts and computing cost of goods
	in different nature of businesses.
	• Provides foundation on cost aspects and enables
	students to prepare for professional courses like
	CMA, CA, CIMA etc., and pursue a career in the field of Cost Accountency.
Flective Subjects – Accounting and Tavation	Enable students to analyze the process of inflation
Accounting and Taxation	• Enable students to analyse the process of milation and investments accounts
Group	<ul> <li>It acquaints the students and makes them familiar.</li> </ul>
Advanced Accounting	with the process and preparation of accounts of
	different types of organizations.
	• Provides knowledge on financial accounting and
	reporting requirements for reporting entities and
	companies for the purpose of external financial
	reporting.
	• Helps to understand the Operation in services
	sectors
Goods and Services Tax	• Equips students with the principles and provisions
	of Goods and Services Tax (GST), which was
	implemented from 2017 under the notion of One
	Nation, One Tax.
	• Provides an insight into practical aspects and hoe
	to apply the provisions of GST Laws to various
Flashing Saltington Finances Courses	situations.
Liecuve Subjects- Finance Group	• Exposure for students to the functioning of finance in the corporate world
International Financial Management	<ul> <li>Holps students to identify the role and purpose of</li> </ul>
	• Heips students to identify the fole and purpose of financial management function within a business
	with regards to making important financial
	decisions like capital budgeting working capital
	inventory management. risk management
	techniques etc.
	• Students gains knowledge on international capital
	markets, foreign exchange markets and learn to
	manage investing and financing activities.

Goods and Services Tax	• Equips students with the principles and provisions of Goods and Services Tax (GST), which was
	implemented from 2017 under the notion of One
	• Provides an insight into practical aspects and
	apply the provisions of GST Laws to various
	situations.
Elective Subjects- Banking and Insurance 5.5	• To understand how the Foreign Exchange Market
International Banking and Forex-Management	operates.
	• To understand the principles of Currency valuation
	• To explain techniques that can be used to hedge foreign exchange risk .
	• To create an understanding on foreign exchange
	Management in India.
Life and General Insurance	• Enable students to understand the aspects of Life and General Insurance.
	• Students gain knowledge on claim, settlement
	procedure of various types of insurance.
	• Enable Students to understand various concepts of
Come	Insurance.
Business Regulation	• Creates an understanding of the Legal
	Environment of Business.
	• Enables students to apply basic legal knowledge
	to business transactions and communicate
	effectively using standard business and legal
	terminology.
Principles and Practice of Auditing	• Provides knowledge of principles and methods of auditing and their applications.
	• Helps student understand various concepts related
	to internal control and audit, verification and
	valuation of assets and fiabilities in a business
	<ul> <li>Provides working knowledge on the framework of</li> </ul>
	Auditing System.
Income Tax-I	• Provides an in-depth knowledge on the provisions
	of Income Tax and familiarize the students with
	recent amendments in Income-tax.
	• Helps students understand the computation of
	Taxable Income and Tax Liability of individuals.
Management Accounting	• Enables students to develop an understanding of
	Management Accounting
	• Helps students understand the analysis and

	interpretation of financial statements with a view
	to prepare management reports for decision-
	making.
<b>Elective Subjects – Accounting and Taxation</b>	• Provides an understanding of assessment of firms
Group	and companies with regard to IT Act 1961.
Business Tayation	• Enables students to gain knowledge on existing
Dusiness Tuxuton	Indirect Tax provisions on goods not covered
	under GST.
	• Enable to understand the concept of custom duty.
Cost Management	• Enables students to understand techniques used to
	control as well as reduce cost.
	• Familiarizes students to different Costing and
	Budgetary Control methods Elective Subjects-
	Finance Group
Performance Management	• Offers knowledge and skills in the application of
	management accounting techniques to
	quantitative and qualitative information for
	planning, decision making, performance,
	evaluation, and control.
	• Helps students understand application of modern
	techniques of costing in industrial settings and use
	of Performance Management Information
	Systems for managing and controlling of
	business.
International Auditing and Assurance	• Enables students to comprehend the importance of
	International Audit framework and regulation.
	• Helps students to understand concepts related to
	Internal control, Review and reporting of
	performance to management.
Electives – Banking and Insurance	• Enable students to acquire skills on techniques of
Risk Management	Risk Management.
	• Help students to understand the various forms of
	Risk and also to analyse the risk and learn the
	various process to manage Risk.
Marketing of Insurance Products	• Enable students to learn the various marketing
	techniques to market the various Insurance
	products and services.
	• To understand the concepts of Marketing
	Management.
	• To understand the tools used by Marketing
	Managers in decision making.
NEP SYLLA	BUS 2021-2022
Program Outcome	• Develops and inculcate versatile skills among
	students by majorly focusing on areas such as
	accounting, marketing, finance, entrepreneurship
	• Building problem solving methodologies among

Financial Accounting	• Understand the theoretical framework of
Correct Correct	• Soft Skills Development: To make the students aware of their own strengths and weaknesses, communicate effectively, maintain good interpersonal skills.
	<ul> <li>accounting principles, tools and techniques to solve specific problems.</li> <li>Leadership Skills: Exhibit leadership qualities in individual as well as group dynamics.</li> <li>Communication Skills: Communicate effectively on various issues with commerce community.</li> <li>Socially Responsible Citizen: Enables identification and development of hidden talents, new ideas for better understanding of self and society and make student to contribute to society and nation building.</li> <li>Individual and Team Building Skills: Perform effectively as an individual and/or member in both general and specific domains.</li> <li>Build public relations: Enhance student's capability in understanding, managing and sustaining public relations.</li> </ul>
Program Specific Outcome	<ul> <li>Analytical Skills: Analyse and solve business and accounting related problems.</li> <li>Skill Development: Apply business and accounting principles, tools and techniques to</li> </ul>
	<ul> <li>organisational problems.</li> <li>Imparts continuous learning through practical approach and development of professional skills relevant to trade and commerce.</li> <li>Helps students to become more organised and systematic in every walk of life and also in business decisions while occupying higher positions in organisations.</li> <li>Provides an understanding of business environment and sustainability and the way to provide solutions to demonstrate growth.</li> <li>Makes the prospective graduates apply ethical principles and commitment to the profession they prefer to take up.</li> <li>Encourages team work and effective communication.</li> <li>Develops successful accounting and financial executives with creative and innovative skills, ethical and moral values.</li> </ul>
	students to find solutions for complex

<ul><li>accounting as well as accounting state</li><li>Demonstrate the ability to pre</li></ul>	andards. pare financial
statement of manufactu	uring and
nonmanufacturing entities of sole p	roprietors.
• Workout the accounting tr	eatments for
consignment transactions & events	in the books of
• Understand the accounting treatm	ent for royalty
• Understand the accounting freatment transactions & articulate the Royalt	v agreements
Demonstrate various accounting	treatments for
dependent and independent branche	es.
Management of Principles Applications         • Bring out the relevance of F W Ta	vlor's view on
management in today's knowledge	era.
• Design strategic plans for various	s organisations
for the attainment of organisational	goals.
• Differentiate between the differentiate	rent types of
organisational structures and	authority and
identify the best one for an MNC.	
Compare the different types of lead	ership styles.
• Identify a few control technique	ues for better
productivity of an organisation.	
Principles of Marketing	montrating and
• Understand the basic concepts of asses the marketing environment	marketing and
Discover the new product develops	nent & identify
the factors affecting the price of a	Product in the
present context.	
• Judge the impact of promotional	techniques on
the customers & importance of	f channels of
distribution.	
• Outline the recent developments	in the field of
marketing.	
• Analyze the consumer behavior	in the present
scenario and marketing segmentation	on.
• Analyze various terms used in acco	unting.
• Understand the procedure for	recording the
• Learn posting the journal entry to 1	adgar
Prepare ledger accounts and cash by	ooks
Demonstrate the ability to prepare f	final accounts
Explain them earning and appreciat	te the relevance
of Financial Planning	
• Comprehend the concept of Invest	tment Planning
and its methods	C
• Examine the scope and ways of	Personal Tax
Planning.	

	• Analyze Insurance Planning and its relevance
	• Develop an insight into retirement planning and
	its relevance.
Seme	ster - II
	<ul> <li>Understand &amp; compute the amount of claims for loss of stock &amp; loss of Profit.</li> <li>Learn variant methods of accounting for him.</li> </ul>
	• Learn various methods of accounting for mre purchase transactions.
Advanced Financial Accounting	• Deal with the inter-departmental transfers and their accounting treatment.
	• Prepare financial statements from incomplete records.
	• Outline the emerging trends in the field of accounting
	• The application of equations to solve business problems.
	• The Application AP and GP in solving business problems
<b>Business Mathematics</b>	<ul> <li>The calculation of simple, compound interest and discounting of Pills of Exchange</li> </ul>
	The use of matrices in business
	• The Application of ratios and proportions to
	business.
	• Understand the framework of Companies Act of 2013 and different kind of companies.
	• Identify the stages and documents involved in the formation of companies in India.
	• Analyze the role, responsibilities and functions of
Corporate Administration	Key management Personnel in Corporate Administration.
	• Examine the procedure involved in the corporate meeting and the role of company secretary in the meeting.
	<ul> <li>Evaluate the role of liquidator in the process of winding up of the company</li> </ul>
	• Summarize the relationship between Banker &
	customer and different types of functions of
Law and Practice of Banking	banker.
	• Analyze the role, functions and duties of paying
	and collecting banker.
	• Make use of the procedure involved in opening and operating different accounts
	• Examine the different types of negotiable
	instrument & their relevance in the present context.

	• Estimate possible developments in the banking
	sector in the upcoming days.
	• Explain the basics of investing in the stock
	market.
	• Differentiate between Primary and Secondary
	Market.
Investing in Stock Markets	• Understand different methods of issue of shares.
	• Understand the different methods of pricing the
	issue of shares.
	• Understand Demat A/c and Depository
	Participants managing Demat A/c.
	• Understand the different types and patterns of
	innovation.
	• List out the sources of innovation and ideas
	generation.
Innovation Management	• Comprehend the Innovation-related strategic
	decisions within organizations.
	• Learn the concept of product and process
	innovation
	• Understand the legal aspects of innovation
	management
Seme	ster - III
	• Understand the treatment of underwriting of
	corporate Securities.
	• Comprehend the computation of profit prior to
Corporate Accounting	incorporation.
	• Know the valuation of Goodwill.
	• Know the valuation corporate Securities.
	• Prepare the financial statements of companies as
	per the Companies Act 2013.
	• Understand statistical data and descriptive
	statistics for business data Analysis.
	• Comprehend the measures of Central Tendency,
Business Statistics	Dispersion and Skewness.
	• Validate the application of Correlation Analysis
	in business decisions.
	• Apply the Regression Analysis Technique for
	business decisions.
	• Demonstrate an understanding of the concepts of
Cost Accounting	costing and cost accounting.
	• Classify, allocate apportion overheads and
	calculate overnead absorption rates.
	Demonstrate the ability to calculate labour cost
	• Demonstrate the ability to prepare a cost sheet.
	• Prepare material related documents understand

	the management of stores and issue procedures.
	• Familiarize with advertising concepts.
	• Able identify effective media choice for
Advertising skills	advertising.
Auverusing skins	• Develop ads for different media.
	• Measure the advertising effectiveness.
	• Analyze the role of advertising agency.
	• Discover their strengths and weaknesses in
	developing the entrepreneurial mind-set.
	• Familiarize themselves with the mechanism of
	setting up, monitoring and maintaining an
Entrepreneurial skills	Enterprise.
	• Understand the various procedures for setting up
	the Startups in India.
	• Understand the role of Government in supporting
Some	stor IV
Senie	• Know the procedure of redemption of Preference
	Shares and Debentures
	• Comprehend the different methods of
	Amalgamation and Acquisition of Companies
Advanced Corporate Accounting	• Understand the process of internal reconstruction.
	• Prepare the liquidators Final statement of
	accounts.
	• Understand the process of Liquidation of
	Companies in India
	• Understand the various methods of costing
	applicable to different industries.
	• Determine the cost under different methods of
Costing methods and Techniques	costing.
	• Analyze the processes involved in standard
	costing and variance analysis.
	• Apply the knowledge gained for decision making.
	• Comprehend the laws relating to Contracts and its
	• Comprehend the rules for Sale of Coods and
Business Regulatory Framework	• Comprehend the fulles for Sale of Goods and rights and duties of a buyer and a seller
	• Understand the importance of Negotiable
	Instrument Act and its provisions relating to
	Cheque and other Negotiable Instruments.
	• Understand the significance of Consumer
	Protection Act and its features e. Understand the
	need for Environment Protection.
Banking Operations	• Understand the concept of banks and banking and
Choracour	its operations

	• Comprehend the procedures and risks involved in
	different types of accounts
	• Utilize the knowledge for bank operations
	• Comprehend the recent banking practices.
Principles of Event Management	• Understand the significance of various events
	• Demonstrate the ability to organize the event.
	• Demonstrate the ability to conduct the event.
	• Prepare the budget require for conducting an
	event.

#### #9, Race Course Road, Bangalore - 560 009

## **Department Of Management**

## Programme Outcome, Programme Specific Outcome, And Course

### Outcome

### **B.B.A (Regular) Degree**

Program outcome	To prepare students t	to pursue careers in Finance function of a company with
	special reference to S	SME sector
	• To prepare studer	its to pursue careers in Marketing function of a company
	with special refere	ence to SME sector
	• To prepare stude	nts to pursue careers in Human Resource function of a
	company with spe	ectal reference to SME sector.
	• To develop Ethica	al Managers with inter disciplinary knowledge
	• To develop Entre	preneurs
	• To develop IT en problems	abled global middle level managers for solving business
	• To develop Bus	iness Analysts for Companies, Capital Markets and
	Commodity Mark	tets
	• To prepare stude	ents to take up Higher Education to become Business
	Scientists, Rese competencies	earchers, Consultants and Teachers, with core
	• To develop the s	tudents for competitive examinations of UPSC, KPSC,
	BSRB, Staff Sele	ction Commission, etc
Program specific	Acquiring Conceptual Clarity of Various Functional Areas.	
outcome	Ability to analyze various functional issues affecting the organization	
	• Demonstrating ab	ility to evolve strategies for organizational benefits
	• Analysis and inter	rpretation of the data which is used in Decision Making
	• Demonstrate the	ability to develop models / frameworks to reflect
	critically on speci	fic business contexts
	Demonstrate Effe	ctively Oral and Written Communication
	Demonstrate Abil	ity to work in Groups
	Demonstrate und	derstanding of social cues and contexts in social
	interaction	
	• Develop Ethical	Practices and Imbibe Values for Better Corporate
	Governance.	
	• Understand ethica	al challenges and choices in a business setting
	• Demonstrate und	erstanding of sustainability related concerns in varied
	areas	
	• Analyze Global E	Invironment and its Impact on Business
	• Understand the ec	cosystem of start up in the country
	• Demonstrate the a	ability to create business plans
	Business Skill	To make students aware of Industrial Process and
	Development	Practices
	Course	To make students understand the Flow of Operations
	(Bsdc)*Industrial	in an Organization
	Visits	

	Community	• To sensitize the students towards community service	
	Service	• To enable students to learn about social	
		entrepreneurship	
	Case Study	To develop thinking and analytical skills	
	Analysis	• To develop managerial skills	
	<b>Preparation</b> Of	To provide exposure for Start-ups and New Age	
	Business Plan For	Business Models.	
	Start-Ups	• To develop entrepreneurial mindset among students.	
	Field Study	To enhance the classroom learning	
	-	To support the students in contextual and experiential	
		learning	
	Employability	To enable the student to prepare for corporate	
	Skills Training	placements	
	Cour	se outcome	
	IS	Semester	
Financial Accounting	• To enable the	e students to have a comprehensive understanding of	
	Financial Acco	ounting	
	• To know the c	onceptual frame work of accounting cycle	
	• To understand	• To understand and prepare Final Accounts of Proprietary Concerns.	
Principles Of Management	• To familiariz	• To familiarize the students with concepts and principles of	
	management		
Corporate Administration	• To familiarize	• To familiarize the students with the existing Company Law and	
Administration.			
Production And Operations • To make the students understand the concepts of production and			
Management operations management			
	II	Semester	
<b>Corporate Accounting</b> • To enable the students to have a comprehensive understanding about			
	the provisions	of the Company's Act and Corporate Accounts and	
	Reporting.		
	• To analyses	the Financial statements for economic decision at	
	• To apphla the	l students to read annual report	
Quantitative Analysis	• To enable the	ic knowledge of mathematics and their application to	
Quantitative Analysis	commercial situ	commercial situations	
Organizational Behavior	• To enable the	students to learn the basics of individual behavior and	
	group behavio	r.	
	• To understand	the organizational dynamics	
Marketing Management	• To enable the	students to understand the concept of marketing, its	
	applications an	nd the recent trends in Marketing.	
	III	Semester	
Corporate Communicat	ion • To enable the	students to understand the skills required for effective	
Skills – I	communicatio	n at different levels of an organization.	
	• To enhance lis	tening, note taking and presentation skills.	
	• To build comr	nunication skills among the students required for Digital	
	Platforms.		
	• To build Busin	ness Correspondence Skills among the students.	

Cost Accounting	• To familiarize students with the various concepts and elements of cost
	and methods of ascertaining the costs
Human Resource	• To familiarize the students with various aspects of Human Resource
Management	Management
Financial Markets And	• To provide an insight into the functioning of Indian financial system
Services	and various components of the financial system.
	• To make the students to understand the inter-relationship among
Rusiness Data Analysis	To hole the students to acquire knowledge on the various statistical
Dusiness Data Analysis	• To help the students to acquire knowledge on the various statistical tools used for data analysis that can be applied in Pusiness
	• To halp the students to understand the statistical tools available for
	business data testing
Cornorate Financial	• To enable students to understand the basic concents of Financial
Management	Management and the role of Financial Management in decision-
	making
	IV Semester
<b>Corporate</b> Communication	• To help the students to gain comprehensive knowledge and skill about
Skills - II	corporate communication
Business Research Methods	• To create an awareness of the Process of Research, the tools and
	techniques of research and generation of reports
Banking Law And	• To familiarize the students with the operations and innovations in
Operations	Banking Sector
Entrepreneurship	• To enable students to understand the basic concepts of
Development	Entrepreneurship and prepare Business Plan to start a Small Industry
Management Accounting	• To enable the students to understand the analysis and interpretation of
	Financial Statements with a view to prepare Management Reports for
	Decision making
Customer Relationship	•To make the students understand the concepts, role, principles and
Management	changing face of CRM as an IT enabled function.
	• To make the students to learn the skills required for effective
	management of Customer Relationship
	V Semester
Income Tax - I	• To expose students to various provision of Income Tax Act relating to
	the computation of Income of Individual Assessee.
<b>Business Regulations</b>	• To introduce the students to the various Legislations affecting
	Business and to familiarize them with such Regulations.
Indirect Taxes	• To impart Students knowledge on GST and Customs Duty.
	• To make the students to understand the rules, regulation and
	procedures relating to GST and Customs Duty.
Information Technology For	• To familiarize students with nature and purpose of database Systems
Business – I	and how they work
	• To develop skills among the students to design and implement simple
	Computer based business Information Systems using MS EXCEL.
	• To familiarize students in latest aspects of Information Technology
	used in business context.
Advanced Corporate	• To provide knowledge on valuation of business enterprises.
Financial Management	• To make students understand the various models of value-based

	management.	
	• To give insight on various forms of corporate restructuring	
Security Analysis And	To provide knowledge and skill in identifying various investment	
Portfolio Management	alternatives and choosing the suitable alternatives.	
	• To orient on the procedures and formalities involved in investing	
	VI Semester	
Income Tax - II	• To make students understand the computation of Taxable Income and	
	Tax Liability of individuals.	
Strategic Management	• To enable the students to understand the various strategic issues such	
	as Strategic Planning, Implementation and Evaluation	
International Business	•To facilitate the students in understanding Globalization and	
	International Business Management	
Information Technology For	• To familiarize with the aspect of Internet, Email, Search Engine	
Business – II Objectives	• To provide an analytical and technical framework to understand the	
	emerging world of Ecommerce.	
	• To develop skills in E marketing Techniques	
	• To familiarize with the aspect of Online Social Networks.	
Risk Management And	• To make the students to understand the various risks associated with	
Derivatives	business.	
	• To provide knowledge on risk measurement and evaluation in making	
	capital budgeting decisions.	
	• To provide knowledge on risks associated with investments outside the	
	business and strategies for	
	• hedging the same with derivatives.	
International Finance	• To orient the students on global business environment and	
	international markets.	
	• To make students understand the various risks an enterprise is exposed	
	to on account of international transactions.	
	• To provide knowledge and skills for hedging foreign currency risks.	
	NEP SYLLABUS 2021-2022	
Program Outcome	• To provide knowledge regarding the basic concepts, principles and	
	functions of management.	
	• To develop business and entrepreneurial skills among the students.	
	• To provide knowledge and requisite skills in different areas of	
	management like human resource, finance, operations and marketing	
	• To equip the students with knowledge related to qualitative and	
	quantitative techniques for critical thinking and problem solving	
	• To provide practical industrial exposure to the students to gain	
	managerial competencies and business acumen while attaining a	
	holistic understanding of a business/industry.	
	•To inculcate global view of the industrial and organizational	
	establishments and their functions for taking viable decisions in	
international business setting.		
Course Outcome		
I Semester		

Management Principles &	• The ability to understand concepts of business management, principles	
Practice	and function of management.	
	• The ability to explain the process of planning and decision-making.	
	• The ability to create organization structures based on authority, task	
	and responsibilities.	
	• The ability to explain the principles of direction, importance of	
	communication, barrier of communication, motivation theories and	
	leadership styles.	
	• The ability to understand the requirement of good control system and	
	control techniques.	
Fundamentals of Accounting	• Understand the framework of accounting as well accounting standards.	
	• The Ability to pass journal entries and prepare ledger accounts	
	• The Ability to prepare various subsidiary books The Ability to prepare	
	trial balance and final accounts of proprietary concern.	
	• Construct final accounts through application of accounting software	
	tally.	
Marketing Management	• Understand the concepts and functions of marketing.	
	• Analyse marketing environment impact the business.	
	• Segment the market and understand the consumer behaviour	
	• Describe the 4 p's of marketing and strategize marketing mix	
	• Describe 7 p's of service marketing mix.	
Business Organization	• An understanding of the nature, objectives and social responsibilities	
	of business An ability to describe the different forms of organisations	
	• An understanding of the basic concepts of management	
	• An understanding of functions of management.	
	• An understanding of different types of business combinations	
	II Semester	
Financial Accounting	• Ability to understand the conversion of single entry into double entry.	
	• The ability to prepare final accounts of partnership firms	
	• The ability to understand the process of public issue of shares and accounting for the same	
	• The ability to prepare final accounts of joint stock companies.	
	• The ability to prepare and evaluate vertical and horizontal analysis of	
	financial statements	
Human Resource	• Ability to describe the role and responsibility of Human resources	
Management	management functions on business	
	• Ability to describe HRP, Recruitment and Selection process	
	• Ability to describe to induction, training, and compensation aspects.	
	<ul> <li>Ability to explain performance appraisal and its process.</li> </ul>	
	• Ability to demonstrate Employee Engagement and Psychological	
	Contract.	
<b>Business Environment</b>	• An Understanding of components of business environment.	
	• Ability to analyse the environmental factors influencing business organisation.	
	• Ability to demonstrate Competitive structure analysis for select	

	industry.
	• Ability to explain the impact of fiscal policy and monetary policy on
	business.
	• Ability to analyse the impact of economic environmental factors on
	business.
<b>Business Mathematics</b>	• The application of equations to solve business problems.
	• The Application AP and GP in solving business problems.
	• The calculation of simple interest, compound interest and discounting
	of Bills of Exchange.
	• The application of matrices in business.
	• The Application of ratios and proportions in business.
People Management	• Ability to examine the difference between People Management with
	Human resource Management
	• Ability to explain the need for and importance of People Management.
	• Ability to explain role of manager in different stages of performance
	management process
	• Ability to list modern methods of performance and task assessment.
	• Ability to analyse the factors influencing the work life balance of an working individual.
# SRI JAGADGURU RENUKACHARYA COLLEGE OF SCIENCE, ARTS AND COMMERCE

#### #9, Race Course Road, Bangalore - 560 009

# **Department Of Computer Science**

# Programme Outcome, Programme Specific Outcome, And Course Outcome

Programme Outcome	• Develop practical skills to provide solutions to
	industry, society and Business.
	• Understand the concepts of key areas in computer science.
	• Analyze and apply latest technologies to solve
	problems in the areas of Computer applications.
	• Recognizes and appreciate the role of computing in
	a wide variety of activities and applications.
	• Distinguish and identify the structure and function
	of modern computer systems in terms of hardware
	and software.
Programme Specific Outcome	• Problem Solving Skills: Analyze and solve
	complex problems using software.
	• Skill Development: Apply Data Interpretation and
	management tools and techniques to solve specified
	problems.
	• Ethics: Apply ethical principles and commit to
	professional ethics and responsibility.
	• Individual and team work: Function effectively
	as a member or leader in diverse teams, in both
	general and technical domains.
	• <b>Communication:</b> Communicate effectively on
Cou	rsa Outcomes
	Semester
Problem Solving Techniques using C	• Enables students to analyses and develop logics and
Troben Solving Teeninques using e	• Enables students to analyses and develop logics and
	inclution to create programs, appreadons
	<ul> <li>III C.</li> <li>Dravides students with a strong foundation in basis</li> </ul>
	• Provides students with a strong foundation in basic
	programming constructs so that they
	• can easily switch over to any other programming
	language.
Computer Organization	• Helps students understand the structure, function
	and characteristics of computer system.
	• Enables students understand the design of the
	various functional units and components of
	computers.
	• Helps identify the elements of modern instruction
	sets and their impact on processor design.
	• Enables students understand the function of each

### **BCA (Regular) Degree**

	element of a memory hierarchy.
Discrete Mathematics	• Recognizes that mathematics permeates the world
	around us and to appreciate the
	• usefulness, power and beauty of Mathematics.
	• Helps in understanding and be able to use the
	language, symbols and notation of
	• Mathematics.
	• Helps develop mathematical curiosity and use
	inductive and deductive reasoning when
	• solving problems.
	• Enables students become confident in using
	mathematics to analyses and solve problems
	• both in academics and in real-life situations.
	• Helps develop abstract, logical and critical thinking
	and the ability to reflect critically upon
	• their work and the work of others
	I Semester
Data Structures	Expose's students to basic data structures and
	algorithms.
	• Introduces students to various techniques for
	representation of the data in the real world.
	• Helps understand and compute the complexity of various elegerithms, he able to design and
	• analyze the time and anone efficiency of the data
	• analyze the time and space efficiency of the data structures.
Data Structures Using C Practicals	• Implementing basic algorithms for sorting and
	searching.
	• Implementing basic data structures such as stacks,
	queues and trees. Applying algorithms in data
Databasa Managamant Systems	structures in various real-inte software problems.
Database Management Systems	• Enables students obtain a broad understanding of detabase concents and detabase
	management system software
	<ul> <li>Haingement system software.</li> <li>Haing obtain a high level understanding of major.</li> </ul>
	• Helps obtain a high-level understanding of high
	Helps to program a data-intensive application using
	DBMS APIs
DBMS Practicals	• The Database System is used to Create a table
	using SOL data definition and data types
	specifying constraints in SOL. retrieval queries in
	SQL, INSERT, delete, Update.
Numerical and Statistical Methods	• Helps students use appropriate mathematical
	language (notation, symbols, terminology) in
	• both oral and written explanations.
	• Enables use of different forms of mathematical

	representation (formulae, diagrams, tables,
	• charts, graphs and models).
	• Facilitates to move between different forms of
	representation, explain the importance of
	• their findings and justify the degree of accuracy of
	their results where appropriate.
	• To suggest improvements to the method when
	necessary.
II	II Semester
<b>Object Oriented Programming Using C++</b>	• Helps in understanding how C++ improves C with
	object-oriented features.
	• Enables students to analyze a problem and
	construct a $C$ ++ program that solves it.
	• Enables to apply the concepts of object-oriented
	programming like inheritance.
	<ul> <li>polymorphism etc.</li> </ul>
Financial Accounting and Management	Helps to define book keeping and accounting
	• Enables students to understand the general
	purposes and functions of accounting
	• Provides for identifying the main financial
	statements and their purposes
Onerating System	• Enables students to do programming and
operating system	debugging C code at the system level
	<ul> <li>Helps to modify C code written by others</li> </ul>
	<ul> <li>Provides to communicate directly with an operating</li> </ul>
	system via system calls
	• Enables students to gain knowledge on operating
	• Enables students to gain knowledge on operating
	detection and concurrency management
	<ul> <li>Helps in understanding the machanisms that handle.</li> </ul>
	• Therps in understanding the mechanisms that handle
T	V Somostor
I Visual Programming	Helps students to understand and develop the client
visual i rogramming	• The ps students to understand and develop the cheft
	• Enables students to develop real time projects and
	• Enables students to develop rear time projects and
Visual Programming Practical	• Writing a Programs using different Tools and
visual i rogramming i ractical	• writing a Frogram's using different roots and creating Controls and also Testing Debugging is
	done
Unix Shell Programming	• Helps gain knowledge on how the shall relates to
	the keyboard the screen the operating
	• system and years' programs
	• system, and users programs.
	• Enables students understand when and why
	command-ime interfaces should be used
	• instead of graphical interfaces.

	• Helps gain insights about concepts related to
	concurrency and control of programs.
Shell Programming Practicals	• Writing a simple programs in shell, to execute
	particular programs based on certain conditions.
Operation Research	Demonstrates an understanding of the concepts from
	the five branches of mathematics
	(number, algebra, geometry, statistics and probability,
	and discrete mathematics)
	• Helps to use appropriate mathematical concepts
	and skills to solve problems in both
	• familiar and unfamiliar situations including those in
	real life contexts.
	• Enables selection and apply general rules correctly
	to solve problems including those in
	• real-life contexts.
	V Semester
Data Communication and Networks	• Enables an understanding of the importance of data
	communication and the internet in
	• supporting business communications and daily
	activities.
	• Helps understand the role of protocols in
	networking and analyze the features and
	• operations of various application layer protocols
	such as Http, DNS and SMTP.
	• Enables students to analyze the services and
	features of the various layers of data network.
	• Helps design, calculate and apply subnet mask and
	address to fulfil networking
	• requirements.
Software Engineering	• Helps students understand software development
	processes and to apply software
	• engineering principles in software development.
	• Enables students to know about classical software
	development life cycles.
	• Emphasizes quality and process improvement
	models.
	• Helps develop a software project in a team.
Computer Architecture	• Enables students to understand the operational units
	and their interconnections that realize
	• the architectural specifications of computers.
	• Provides in-depth knowledge on instruction sets,
	memory hierarchy & different I/O
	• methods to enables better understanding of
	Hardware Organization of the computer system.

	• Helps students identify the structure, function &
	characteristics of computer system by
	• which they can develop machine dependent
	programs.
JAVA Programming	• Enables gain knowledge of the structure and model
	of the Java programming language.
	• Helps develop software applications using Java.
	• Enables to identify Java language components and
	how they work together in applications.
Java Programming Practical	• Developing a core java programs, to implement
	command line arguments ,inbuilt classes.
Microprocessor and Assembly Language	• Helps students to understand basic architecture of
	processor and upgrade them
	• Enables students to know the basic memory
	specification and working of the instructions.
V	'I Semester
Theory of Computation	• Enables students to understand how machines
	compute the function and solve problems.
	• Helps develop methods to describe and analyze the
	dynamic behavior of discreet systems.
System Programming	• Provide students thorough knowledge of assembly
	language, macro processor, assembler,
	• linkers and loaders.
	• Provides understanding of the machine structure
	through which machine level programming can be
	improved, thereby enabling students to learn any
	other high level programming languages that are
	out of the curriculum.
Cryptography and Network Security	• Helps students understand how to maintain the
	confidentiality, integrity and availability of
	• data.
	• Enables students to understand various protocols
	<ul> <li>threads in the networks</li> </ul>
Web Programming	<ul> <li>Helps students understand the principles of creating</li> </ul>
·····	an effective web page, including an in-depth
	• consideration of information architecture.
	• Enables students become familiar with graphic
	design principles that relate to web design
	• and learn how to implement theories into practice.
	• Helps develop skills in analyzing the usability of a
	web site.
Web Programming Practicals	• Develop Web programs to implement web pages.
	JavaScript code to Evaluates and applying CSS for
	Creating a web page.
Project	• Final Year students will be doing Project on Visual

	Basic Programming/Java programming.
NEP SYLLABUS 2021-2022	
Programme Specific Outcome	• Preparing student for roles pertaining to
	computer applications and IT industry. Start from
	the basics in every semester and learn each and
	everything about computers.
	• Develop programming skills, networking skills,
	learn applications, packages, programming
	languages and modern techniques of IT.
	• Learn programming language such as C, Java,
	Python, HTML, SQL, etcGives overview of the
	topics in IT like networking, Artificial
	Intelligence, Algorithms, Data
	• Analytics, web development, trouble shooting,
	and hardware and software skills.
	• Bachelor in computer applications (BCA) gives a
	number of opportunities to individuals, a few of
	them being like software programmer, system and
	network administrator, web designer.
Соц	irse Outcome
Sen	nester I
Problem Solving Techniques	• Illustrate the flowchart and designing an
	algorithm for a given problem.
	• Develop c programs using operators, conditional
	and iterative, user defined functions.
	• C programs that use pointers to access arrays,
	strings and functions.
	• Exercise user defined data types including
	structures unions to solve problems.
Course SpecificOutcome	Understand the concepts of programming.
C Programming Lab	• To Write programs to understand selection and
	iterative statements.
	• To Write programs to implement usage of arrays.
	• To develop code reusable programs using
	functions.
	• To Write programs using pointers and user
	defined datatypes.
Course SpecificOutcome	Gets nands on experience of C language.
Office Management Tools	• Understand various word processing features
	like mail-merge, tables, graphs, symbols,
	borders and shadings using MIS-Word.
	• Understand the basics and advance concepts of MS Excel
	WID-EXCEI.
	• Students learn the skills of giving presentations
	using MiS-rowerPoint.
Course SpecificOutcome	Students develop the skills of Office Automation

	process.
Discrete Structures	• Write an argument using logical notation and
	determine if theargument is or is
	• Understand the basic principles of sets and
	operations in sets.
	• Demonstrate different traversal methods for trees
	and graphs.
	• Define fundamental logic operations and relate
	Boolean expressions to truth tables and logic
	diagrams.
	• Solve systems of linear equations in matrix form.
Course SpecificOutcome	In this course, the student learns several important
	topics of Discrete structures. This includes Set
	theory and logic, relations, partially ordered sets,
	Boolean algebraand Boolean functions, analysis of
	algorithms, recurrence relations, finite state
	machines, discrete probability and graph theory.
Data Structures	• Ability to choose appropriate data structures to
Data Structures	• Ability to choose appropriate data structures to
	• Ability to analyze the time and snace complexities
	of Algorithms
	• mplement and know the application of algorithms
	for sorting and pattern matching (searching)
	• Ability to design programs using a variety of data
	structures such as stacks queues hash tables
	binary trees search trees traversing trees heaps
	graphs, and B-trees.
Course SpecificOutcome	Better understanding of data structures and realize the
	importance of advance features of data structures.
Data Structures Lab	• To implement the program on Sorting and
	Searching
	• To write a program on Stack queues.
	• To implement the program to construct binary tree
	Semester II
Database Management System	• Give an introduction about DBMS, data models,
	a schema, E-Rdiagram, relational database and
	benefits of database. Able to design a good
	database using normalization, decompositionand
	functional dependency.
	• Understand the concepts of database architecture,
	applications of database systems, client server
	architecture, parallelism concepts and distributed
	database concepts
	• Learn about indexes, sequences, data integrity,
	creating andmaintaining tables and user privileges,

R) model .relational algebra.Construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, Delete), Data Base languages- DML,DDL,TCL,DCL.Understand principles of database transaction management, database recovery, security, analyze the difference between traditional file system and DBMS.Course SpecificOutcomeMaster the basic concepts and appreciate the applications of database systems.DBMS Lab• Practically implement SQL queries. • Understand the concepts of tables, fields, rows, records, tuples • Build relationship amongst tables.Course SpecificOutcomeMaster the basics of SQL and construct queries using SQL.Java Programming• Understand the concepts of tables, fields, rows, records, tuples • Build relationship amongst tables.Java Programming• Understand the use of Classes and methods, array strings and vectors, interface concept instead of multiple inheritances, Packages and in Java. • Able to develop and understand exception handling, multithreaded applications and develop applets for web applications and develop applets for web applications and handle IO streams • Know operators and expressions, decision making and branching.Decision making and looping, able to perform applet programming designing HTML, graphicprogrammingCourse SpecificOutcomeTo learn how to implement object-oriented designs with Java Leam Java alnguage components and how they work together in developing applications. To design and program stand-alone Java applications.Java Programming Lab• Write java application API as well as the javastandard class library. • Write java programs using Inheritance, exception, threads, graphics and iostreams. <td< th=""><th></th><th>understand the concept of Entity-Relationship (E-</th></td<>		understand the concept of Entity-Relationship (E-
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Computer Architecture • Introduction to digital computer and their	Computer Architecture	• Introduction to digital computer and their
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	• the concepts of parallel processing, pipelining and
	inter-processor communication.
	• Understand the architecture and functionality
	central processing unit, I/O and memory organizatio
	number systems, binary addition and subtractio
	2'scomplement representation and operations with th
	representation.
	• Define the function units of computer architecture
	Input and Output peripheral devices and their
	communication with the rest of the commuter
	components Various instruction type and addressin
	modes used forprogramming Able to understand
	the basic programming unit and execution of
	instruction
	• Include the interrupts and direct memory access an
	clasp the standard I/O devices memory organizatio
	hierarchy and organization. Able to aware of RAN
	KOM, COS1, SIZE, CACHE and virtual memory.
Course SpecificOutcome	Introduce principles of computer organization, basic
	architectural concepts, processing, memory and i/o
	organization in a computer system.
	Semester III
Python Programming	• Interpret the fundamental Python syntax and
	semantics and be fluent in the use of Python control
	flow statements, handling of strings and functions
	• Determine the methods to create and manipulate
	Python programs by utilizing the data structures
	like lists, dictionaries, tuples and sets,
	Implement Object-Oriented Programming concepts
	such as encapsulation, inheritance and
	polymorphism as used in Python.
	• Identify the commonly used operations involving
	file systems and regular expressions
Course SpecificOutcome	Acquire programming skills in core Python.
	Understand to implement Object-oriented
	programming skills in Python.
	Develop the skill of designing graphical-user
	interfaces (GUI) in Python.
Python Programming Lab	• Write, Test and Debug Python Programs,
	Implement Conditionals and Loops for Python
	Programs
	• Use functions and represent Compound data using
	Lists, Tuples and Dictionaries
	• Read and write data from & to files in Python and
	develop Application using IDLE Thonny
Course SpecificOutcome	Setup nython to develop simple applications
	python to acterop simple applications.

	Make use of the python programming language to
	construct basic programs.
Computer Network	• Know the basic of network, network type's
	reference model andlayers in network, routing
	algorithm that are used innetwork
	communication
	• Learn the different types of protocols such as RPP, DHCP, ARP,RAP
	• Familiar with basic devices like repeaters, bridges,
	gateways and quality of service
	• Learn the concepts of IPV4, IPV6, Subnet, Network
	traffic congestion, collisions.
Course Specific Outcome	How communication works in computer networks and
	to understand the
	basic terminology of computer networks
	Role of protocols in networking and to analyze the
	services and features
	of the various layers in the protocol stack.
	Security services and mechanisms to counter.
Computer Network Lab	<ul> <li>Learn various Network Commands, Cables,</li> </ul>
	Crimping, resource sharing, security features,
	assign usernames.
Course Specific Outcome	Practically implement the various concepts of
	network, file sharing, installation.
Operating Systems	<ul> <li>Learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system.</li> <li>Knowledge of memory management and deadlock handling algorithms.</li> <li>Implement various algorithms required for management, scheduling, allocation and communication used in Operating System.</li> <li>Learn about operating systems functions of</li> </ul>
	• Learn about operating systems, functions of operating systems, system calls, process coordination and process scheduling algorithms, memory management, critical section and deadlock handling Algorithms, file management and disk scheduling algorithms.
Course Specific Outcome	<ul> <li>Understand the services provided by and the</li> </ul>
Computer Assembly and Repair	<ul> <li>design of an operating system, the structure and organization of the file system.</li> <li>To understand what a process is and how processes are synchronized and scheduled, understand different approaches to memory management.</li> <li>Identify various parts of a Computer System.</li> </ul>
p	rational parts of a computer bystem.

	• Installation of Operating System, add/ remove a file
	from folder or directory.
	• Assemble and Disassemble a computer,
	troubleshooting
Course Specific Outcome	The students gain the knowledge and skills required
•	in PC assembly, upgrading, repair, and
	maintenance of a computer system.
S	emester IV
Software Engineering	• Identify the minimum requirements for the
	development of application using software models,
	prototypes,
	• Develop, maintain, efficient, reliable and cost
	effective software solutions, implement of the
	software metrics
	• Understanding of software testing approaches such
	as unit testing, integration testing, system testing,
	manual testing, automated testing.
	• Understanding on quality control and how to ensure
	good quality software, tools and techniques of
	software engineering
Course Specific Outcome	Understand software requirements specifications for
course specific outcome	different projects basic concepts and importance of
	Software project management concepts like cost
	estimation scheduling and reviewing the progress
Design and Analysis of Algorithms	• Learn fundamentals of Algorithms problem
	solving techniques, time and space complexity.
	<ul> <li>Apply graph and tree traverse technique to various</li> </ul>
	applications, Implement dijkstra's algorithm,
	Warshall's and Floyd's Algorithms. Greedy
	Techniqu, Prim's Algorithm, Kruskal's Algorithm,
	Huffman Trees.
	• Explain the basic traversal and searching
	techniques (BFS and DFS).
	• Design techniques, divide and conquer, greedy,
	dynamic programming.
Course Specific Outcome	Understand different algorithm design techniques and
	to choose appropriate algorithm design techniques
	for solving problems.
Design and Analysis of Algorithms Lab	• Practically implement programs and algorithms on
	binomial co-efficient, Merge Sort, Quick Sort,
	Related Properties Strassen's Matrix
	Multiplication, string matching techniques.
Course Specific Outcome	Understand and execute the working of various
	algorithms.
Internet Technologies	• Understand, analyze and apply the role of
	languages like HTML,

	<ul> <li>DHTML,CSS, XML, JavaScript, in the workings of the web and web applications.</li> <li>Learn various Internet and web protocols like HTTP, understand Information Retrieval on the Web using tools.</li> <li>Learn Web Development Basics, Elements of Web Development , Client-Side and Server-Side Scripting.</li> </ul>
Course Specific Outcome	Learn the important technologies used in web
	applications, how web works, how data transmits, how data is stored
Internet Technologies Lab	• Understand how e-mail works, creating and
0	scheduling online meeting using various online
	tools like gmeet, zoom.
	• Practically implement web forms using HTML
	elements, creating a basic web page, store
	information on a database using web forms.
Course Specific Outcome	Practically understand the method of creating working
	of a web pages.

# SRI JAGADGURU RENUKACHARYA COLLEGE OF SCIENCE, ARTS AND COMMERCE

#### #9, Race Course Road, Bangalore - 560 009

### **Department Of Commerce**

# Programme Outcome, Programme Specific Outcome, And Course Outcome

### M.Com (Regular) Degree

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Program Outcome	<ul> <li>To impart to the Students, professional education and training in various aspects of business and its environment.</li> <li>To provide them with opportunities to develop managerial and analytical skills in order to meet the challenges of business at the national and global level.</li> </ul>
Program Specific Outcome	<ul> <li>To Provide insights about advanced applications in order to meet industrial standards.</li> <li>To enable students with vast knowledge from various areas and aspects of the economy.</li> <li>To provide inputs regarding certain information that student should know and impart the same in their future life.</li> <li>To ensure students are trained as per the trandy.</li> </ul>
	• To ensure students are trained as per the trendy aspects of the economy which also ensure their professional growth in future.
Course	Outcome
Seme	ester I
Monetary System	<ul> <li>To provide knowledge about the existence of gold standard before and introduction of the monetary system in the economy.</li> <li>To ensure that the knowledge of economy's monetary system is reaching the student community.</li> </ul>
	<ul> <li>To provide insights on national and international monetary system.</li> <li>To enable students with sufficient knowledge on how monetary system is adopting to changes due to economic conditions.</li> </ul>
International Business	<ul> <li>To provide insights on international business transactions.</li> <li>To ensure that students get input regarding international requirements and its business environment.</li> <li>To impart the knowledge of international transactions and its growth and development.</li> </ul>
Macro Economics for Business Decisions	• To provide an insights on external factors that influence business environment.

	• To emphasize decision making potentiality
	through the external environment forces.
	• To impart the knowledge of overall business
	management with such inputs among students.
	• To provide the knowledge of how advanced
	level of financial implications influence business
	processes.
	• To provide insights practical applications of
Advanced Financial Management	financial resources and to identify the best
	sources.
	• To educate people about financial aspects of
	business in order to evaluate the risk and return
	applications.
	• To provide better indications that human
	resources and important part of the business.
	• To give insights that managing human resources
Human Resource Management	are one of the crucial technique to the business
Human Resource Management	organizations.
	• To provide knowledge about the human
	resources as an asset and capital into the
	business which has to bring the outcome to
	various aspects of business
	• To impart the technical knowledge to train with
	the practical approach among students.
Information Systems and Computers	• To provide better insights about the information
intormation Systems and Computers	systems utilized in the trendy business
	applications.
	• To provide knowledge about computer
	applications in various areas of the business.
	• To provide better skills in communication in
	order to train students as per the standards.
	• To ensure that with better communication skills
SOFT CORE Communication Skills	students meet industrial requirements.
	• To provide sufficient etiquette through
	communication skills which impart the changes
	in behavioural aspects and moulds the
	personality of the students.
Semes	ster II
	• To provide insights on Indian banking system
	• To give information regarding risk management
	applications.
Indian Banking Risk Management	• To provide sufficient knowledge about banking
	risk and measures adopted to manage the
	financial risk through capital adequacy norms.
	Basel norms and Credit norms.
	• To develop the knowledge regarding the role of

	banking sector in the development of the
	economy.
	• To Provide knowledge about E- commerce
	implications in present scenario
	• To provide inputs about mobile applications in
	the management of online business.
Advanced E – Commerce & Mobile Commerce	• To bring insights about development of e-
	commerce and mobile applications among
	students in the present global world.
	• To provide information about electronic
	• To create a research oriented learning in the
	• To create a research oriented learning in the mind set of students
	• To make students research oriented in
	conducting some research to provide vast
	information to all
	<ul> <li>To bring insights about research process design.</li> </ul>
	types for conducting research in various areas.
	• To impart the knowledge about qualitative and
Business Research Methods	quantitative applications in research
	• To enable them to perform research tests starting
	the basics like mean, median, mode and standard
	deviation and further research such as t-test, z-
	test, chi-square, Anova etc.,
	• To prepare them to write a Research Report in a
	systematic manner for better presentations.
	• Learning about solving the critical issues in the
	organization through practical approach
Operations Research & Quantitative Techniques	• Enabling students to know about solving for
Purcinens	critical paths and program reviews.
Business	• To ensure students are capable of adopting
	problem solving methodologies and better
	mindset for better future
	• To bring out the vast opportunities for small
	requisitions in the business organization.
	• To make students know about the various
	sources of finance available for poor and
	opportunities for development of poor.
	• To provide knowledge about various schemes
SOFT CORE Micro Finance	offered for rural and BPL population
	development.
	• To make them understand the schemes of
	MGNREGA projects and developments in
	various parts of the nation.
	• To provide insights about government plan,

	projects and schemes launched for overall
	development of the nation.
Seme	ester III
	<ul> <li>To provide knowledge on code of ethics; importance of ethics in business.</li> <li>To bring insights about Corporate social</li> </ul>
Business Ethics	faces of social responsibility- ethical climate in companies.
	• To bring awareness about unethical practices in Finance, Marketing, Information Technology and Human Resources Management.
	• To provide inputs on Concept of corporate governance – importance - Corporate governance and agency theory.
	• To provide an Overview of International Accounting Standards (IAS);
Corporate Financial Reporting	• To enable the student by giving information about Significance vis-à-vis Indian Accounting Standards. US GAAP, Application of IFRS and US GAAP.
	• To provide insights about the recent development such as Concept of Triple Bottom Line Reporting, Global Reporting Initiative (GRI), and International Federation of Accountants (IFAC).
	• To make familiarize about Financial Reporting by Nonbanking finance companies, Merchant Bankers, stock and commodity market intermediaries.
	• To provide knowledge about Value Added Statement, Economic Value Added, Market Value Added, Shareholders' Value added, Human Resource Reporting, and Inflation Accounting
Accounting for Managerial Decisions	• To provide knowledge about Decision making process, Database for decision-making, Costbased Decision making.
	<ul> <li>Marginal Costing and Short term Decisions and pricing, Application of short term decision models for better management program.</li> <li>To make students to prize invisit.</li> </ul>
	• To make students to gain insights on Responsibility accounting: meaning and definition, process in implementation, responsibility reporting.

	<ul> <li>To ensure student increase their learning capability based on Steps in Preparation of master budget, zero based budgeting (ZBB): meaning, requisites for implementation, features, ZBB vs. Traditional budgeting, benefits, and criticism.</li> <li>To provide information on uniform costing, uniform costing manual.</li> </ul>
Strategic Cost Management	<ul> <li>To emphasize on Importance of analyzing cost elements, cost control and cost reduction: meaning, process, methods and techniques of cost control and cost reduction, cost management:</li> <li>To provide learning applications on value analysis and value engineering, strategic analysis of cost, business process re-engineering, benchmarking.</li> <li>To provide insights on Characteristics of ABC, benefits from adaptation of ABC System, problems on comparison between traditional system and ABC system.</li> <li>To provide knowledge about Project life cycle costs, optimization of project life cycle costs.</li> <li>To develop and make learn about more implications of Modern production management techniques, benefits and drawbacks of Lean Cost</li> </ul>
Direct Tax Planning	<ul> <li>Management.</li> <li>To Bring insights about company Act, tax planning and its methods, advance tax rulings.</li> <li>To provide learning applications on scheme of taxing business income of companies, business deductions/allowances, disallowances and depreciation.</li> <li>To practical train them in Computation of taxable income of companies set off and carry forward of losses, deductions under section 80G/801A-801B-801C</li> <li>To provide knowledge about Tax planning with respect to amalgamation and mergers, multinational companies, double taxation treaties, joint ventures and foreign collaborations, tax consideration in make or buy, own or lease, retain or replace, Transfer pricing.</li> <li>To enable students in learning the Procedure for assessment, deduction of tax at source, advance</li> </ul>

	payment of tax, refunds, appeals and revision.
	Wealth tax for companies, charging section, exempted wealth computation of net wealth, wealth tax planning to meet the present
	standards.
Pedagogy of Teaching	<ul> <li>To introduce the teaching applications among the students.</li> <li>To provide insights about teaching applications and methods of teaching to student community.</li> <li>To introduce the teaching process, techniques and management of teaching methodology to help students who opt of teaching profession and here the students who are th</li></ul>
Semes	also introduce such techniques to others.
Commodity Markets	<ul> <li>To impart the knowledge of Growth of Global and Domestic Commodities Derivatives Markets, Agricultural Commodities Market and Non-Agricultural Commodities Markets Commodity Exchanges.</li> <li>Quality Assurance, Concepts of Quality in Commodities, Methods of Quality Assurance Grading and Standardization.</li> <li>To bring out the highlights of Commodity Derivatives: Evolution of Commodity, Derivatives, Evolution of Commodity, and Derivatives in India.</li> <li>To provide information about Warehousing and Warehouse Receipts, Storage, practice s in India, Risks in Storage, Structures, Essentials of storage cost, warehousing, types of warehouses.</li> <li>To familiarize with FCR Act 1952, FMC and Regulatory structure of commodities Derivatives markets in India (Objective, Functions, Power and responsibilities, Scope of Regulation), Essential Commodities Act and role of central and state Governments,</li> </ul>
Corporating Reporting practices and Ind AS	<ul> <li>To bring insights about the GAAP in India and Hierarchy of GAAP in India, International Financial Reporting Standards, First time adoption (IFRS 1) – Convergence with IFRS – Stage-wise Approach.</li> <li>To throw lights on Relevant Terms, Types of merger, methods of accounting, treatment of</li> </ul>

	Goodwill arising on merger, purchase
	consideration and settlement.
	• To give knowledge based on Consolidation of
	foreign-Holding company, Subsidiary Company
	and Associate Company including multiple
	subsidiaries.
	• To provide information about the Balance Sheet
	and cash Flow Statements for Group companies,
	Impact of group financial statements at the point
	of acquisition.
	• To provide knowledge about Accounting based
	information like Agriculture –Insurance
	contracts-Exploration for and Evaluation of
	Mineral Pasources Pagulatory Deferral
	Accounts
	Accounts.
	• To educate about Pricing policy, process, Role
	and methods: cost plus pricing, Marginal cost
	pricing, pricing for target rate of return, added
	value method of pricing, differential cost pricing
	going rate pricing, opportunity cost pricing,
	standard cost pricing, customary pricing.
	• To provide information about Transfer Pricing
	Transfer Pricing – meaning, necessity,
	Objectives, applications, Methods (Cost Based,
Strategic Cost Management II	Market Price Based and Negotiated Pricing.
	• To give insights on learning curve theory and
	phases in learning curve.
	• To provide practical knowledge on cost of
	Conformance, Prevention costs, appraisal costs,
	cost of Non-conformance, optimization of
	quality cost, TQM Core concepts of TQM.
	• To provide inputs on Balanced Scorecard and
	Benchmarking attributes to good performance
	measurement system, concept of balanced score
	card.
	• To provide information regarding direct and
	indirect laws.
	• To provide knowledge on Central Excise and
	Salt Act 1944 with practical applications of
	valuation of excisable goods, central excise
Goods and Services Tax	licensing – detailed procedure.
	• To give insights on Customs Act 1962 · Details
	of procedure in relation to the levy collection
	and exemption from customs duties
	To educated about Central Sales Tay Act 1056
	with Constitutional background of CST Inter
	with Constitutional Dackground of CS1, Inter-

state trade and commerce restriction of powers
of taxation on sales by state – liability of sales
tax - inter-state sale - occasions movement of
goods, sale by transfer of documents, sale under
CST – transactions which are not sales – persons
liability of sales tax.