GOVERNMENT DEGREE COLLEGE
NAGARI

COURSE OUTCOMES

S.No	Course Code	Name of the Course	Course Outcomes
ENGLISH			
1.	1-01R	**Prose, Poetry, Short story, One Act Play and Language Activity**	After Completion of this course the student would be able to: **CO1:** Understand the varieties of cultures, languages, poetic diction, use of language; imagery etc. through exposure to various poems, essays, short-stories and one-act plays. **CO2:** Acquire the knowledge of language skills, vocabulary, dialogue writing etc. **CO3:** Read and comprehend literary pieces and grammatical ability. **CO4:** Apply the acquired knowledge of grammar and vocabulary to real life situations through communication and essay writing exercises.
2.	2-01-R	**Prose Poetry, short story and Drama**	After Completion of this course the student would be able to: **CO1:** Enrich their reading, writing and learning abilities. **CO2:** Pursue their personal, academic and career goals through the acquisition and improvement of English language skills. **CO3:** Apply the basic elements of grammar and tests listening, speaking and writing abilities. **CO4:** Explore and exploit everyday communications situations to reinforce what they have learnt.
3.	2-09	**Communication and soft skills-I**	After Completion of this course the student would be able to: **CO1:** improve effective their communications skills. **CO2:** Impart their abilities of co-operation and collaboration with people. **CO3:** Build critical and creative thinking competencies. **CO4:** Make the students confident enough to face the challenges of future in using the language and employable. **CO5:** Build and enhance active vocabulary and ability to express effectively.
4.	3-01	**Prose, Poetry, Short story, One Act Play and Language Activity**	After Completion of this course the student would be able to: **CO1:** Develop the skills of guessing the meaning of un familiar words, identifying and synthesizing information. **CO2:** Acquire the skills of understanding different

			strategies of forming words. **CO3:** Produce a coherent and cohesive piece of writing on a given topic. **CO4:** Make the students perceive the deeper nuances of creativity. **CO5:** Make the learners develop their communication skills for their immediate needs in variety of social situations.
5.	**3-08**	**Communication and soft skills-II**	After Completion of this course the student would be able to: **CO1:** Know the benefits of knowing the sounds and symbols of the English language. **CO2:** Know the division of syllabus and structure of sentence. **CO3:** Understand the different functions of language like greeting and introducing in various contexts. **CO4:** Make the students understand the roles plays and to make them participate in role-play successfully. **CO5:** Make the students understand the different aspects of English spelling and use spelling in a perfect way.
6.	**4-07**	**Communication and soft skills-III**	After Completion of this course the student would be able to: **CO1:** Enable the students to acquire the soft skills which are needed in getting jobs. **CO2:** Enable then to resolve practical problems and professional crises through soft skills. **CO3:** Enable them equipped with drafting and documentation skills for professional excellence. **CO4:** Inculcate the dynamics of paragraph writing, summarizing and e- correspondence. **CO5:** Make the students prepare a good resume, curriculum vitae and covering letter which are essential for a successful career.
TELUGU			
7.	**1-05**	**Semester-I Telugu-poetry, Prose(short stories) and grammar**	After Completion of this course the student would be able to: **CO1:** Study of Ancient Telugu Literature releases the impact of Values, Culture and Heritage on life. **CO2:** Understand the distinction between the ancient and modern Grammar. **CO3:** Understand the difference between the different Classical poets, their Works and their impact on the society. **CO4:** Know the basic rules of the grammar of the classics and locate the Same in Poetry selections. **CO5:** Know the beauty of the nature. **CO6:** Know the common mistakes in writing Telugu Words.
8.	**2-05R**	**Semester-II Telugu-Poetry, Prose**	After Completion of this course the student would be able to:

		(short stories) and Novel.	**CO1:** Understand the Distinction between the classical and modern poetry. **CO2:** Modern Literature deals the downtrodden and oppressed classes lives. **CO3:** Analyze and Interpret the socio cultural aspects based on the Prescribed Prose text. **CO4:** Aware the Social Evils such as suppression of women, child Marriages, Castes in dowry system. **CO5:** Aware the changes that taken place in villages- Impact of modernity Entered in villages, ill effect of globalization on village crafts and Artisans life.
9.	**3-05**	**Semester-III Telugu-Poetry, Drama and grammar**	After Completion of this course the student would be able to: **CO1:** Understand the importance of Noble thoughts and actions like Truth through the prescribed text. **CO2:** Know the true meaning of attractions towards Opposite sex and the true meaning love towards fellow mankind. **CO3:** Understand the structure of plot and various other Elements of Drama. **CO4:** Develop the reading, writing, spoken and listening skills through Grammar part.
10.	**4-10**	**Semester- IV Leadership Education.**	After Completion of this course the student would be able to: **CO1:** Know about Leadership and acquire the Characteristics of Leaders. **CO2:** Gain knowledge about organization and sub-systems of organization **CO3:** Understand about management and levels of management and Importance of management in the globalization scenario. **CO4:** Gain the Knowledge about the Motivation Theories and importance of motivation. **CO5:** Understand the concepts like Groups, Teambuilding, Roles and Morals etc.
TAMIL			
11.	**1-04R**	**Semester-I: History of Tamil Literature, general Composition and translation and Non-details**	After Completion of this course the student would be able to: **CO1:** The study of Ancient Tamil Literature releases the impact of Values, Culture and Heritage on life. **CO2:** Understand the distinction between the ancient and mediate Literature. **CO3:** Understand the difference between the different Classical poets, their Works and their impact on the society. **CO4:** apply the Arinjar Annavin sirugadai kalainjeeyam stories to their lives. **CO5:** Translate English essys to Tamil language.
12.	**2-04R**	**Semester-II: History of Tamil Literature, general**	After Completion of this course the student would be able to: **CO1:** Understand history and culture of medieval

		Composition and translation and Non-details	literature **CO2:** Evaluate the ruling system of Pallava, Nayakkar and Islaamiya pulavargal. **CO3:** know about valiancy, victory, charity of ancient tamil kings **CO4:** apply the Arinjar Annavin sirugadai kalainjeeyam stories to their lives. **CO5:** Translate English essys to Tamil language.
13.	**3-04R**	**Semester-III: Prose, Poetry, non-Detail and Grammar.**	After Completion of this course the student would be able to: **CO1:** Explore the genre - novel with a social perspective **CO2:** Recognize the importance of Thirukkural and Tiruppaavi among World Literatures. **CO3:** Understand the philosophy of Manimegalai and jayagandhan. **CO4:** Gain knowledge on paanjaali sabadam sarukkam. **CO5:** Understand the relationship of teacher and students.
ECONOMICS			
14.	**1-1-107R**	**Micro Economics (Consumer Behavior)**	After Completion of this course the student would be able to: **CO1:** Evaluate the consequences of economic activities for individual and social welfare. **CO2:** Understand various Methodologies of studying Economics **CO3:** Understand and analyze utility analysis and apply the same in his life **CO4:** Understand about the demand and its responses and how it will be measured **CO5:** Understand about the consumer behavior.
15.	**1-2-107R**	**Micro-Economics - Production & Price Theories**	After Completion of this course the student would be able to: **CO1:** Gain knowledge regarding production and its different functions. **CO2:** Acquire knowledge regarding different types of cost and revenue. **CO3:** Understand and working of different kinds of market structures operating in the world. **CO4:** Understand how the factor prices determined and it theories, particularly about **CO5:** Acquire knowledge regarding about the interest and profits.
16.	**1-3-107R**	**Macro Economics – (National Income, Employment and Money)**	After Completion of this course the student would be able to: **CO1:** Understand different concepts of National income and methods to measure national income. **CO2:** Acquire the knowledge about the classical and Keynes theories of employment. **CO3:** Understand Keynes theory of consumption function and working of multiplier and accelerate

			principle. **CO4:** Understand the functions of money, different theories of money.
17.	**1-4-107R**	**Macro Economics (Banking and International Trade)**	After Completion of this course the student would be able to: **CO1:** Gain knowledge regarding macroeconomic concept of Inflation, Deflations and how it can be controlled. Understand the meaning and definitions of trade cycle its phases, consequences and controlling measures. **CO2:** Acquire knowledge regarding functions and performance of banking sector. **CO3:** Gain knowledge about the classical and Keynes theories of employment. **CO4:** Know the particular solutions to the economic functions like Monetary and Fiscal policies. **CO5:** Understand how international trade has helped countries to acquire goods at cheaper cost and explain it through the various international trade theories.
18.	**1-5-107A**	**Economic Development And Indian Economy**	After Completion of this course the student would be able to: **CO1:** Demonstrate familiarity with some central themes and issues of economic development. Engage in critical thinking through the Comparative assessment of competing Economic development models and policy frameworks. **CO2:** Learn how to articulate pragmatic, principles-based policies to enhance economic well-being and promote social justice. **CO3:** Understand about Demography and its recent trends including latest population policy. **CO4:** Understand regarding the current structure of Indian economy likes National Income, Poverty, and Unemployment etc **CO5:** Analyze new economic policies (privatization, liberalization and globalization) in India Understand the role of the Indian economy in the global context.
19.	**1-5-107B**	**Indian And Andhra Pradesh Economy**	After Completion of this course the student would be able to: **CO1:** Acquire knowledge regarding agriculture sector in India, its trends and productivity. Understand about the rural issues like credit, Marking, food problem in India. **CO2:** Understand industrial sector and its changing role in Indian economy. **CO3:** Analyze the role of service sector in Indian Economy. **CO4:** Understand, interpret, compare & contrast, explain the need of planning and know the changes through planning that led to evolution of Indian economy.

			CO5: Understand about Andhra Pradesh Economy and its progress.
20.	**1-6-107**	**Entrepreneurship And Small Business Development**	After Completion of this course the student would be able to: **CO1:** Classify the evolution of Entrepreneurship and gain knowledge on the role of entrepreneur in economic growth and changing approaches in economic scenario for small scale entrepreneurs. **CO2:** Write down the factors affecting entrepreneurial growth Manage their own/family business in skillful manner with new idea coping with fast changing requirements of the society. **CO3:** Describe the Entrepreneurship Development Programmes Techniques of business idea generation and business opportunities and preparation of project report are learnt. **CO4:** Learn the ways entrepreneurial development can be implemented through various agencies like DIC, NSIC, SIDBI, SIDO, IDBI, IFCI. **CO5:** Understand the preparation Project Techniques of business idea generation and business opportunities.
21.	**1-6-107A**	**Industrial Economics**	After Completion of this course the student would be able to: **CO1:** Analyze the Industry and Economic Development. **CO2:** Describe and explain the determinants of the size and structure of firms and the implications of the separation of ownership and control. **CO3:** Find, analyze, understand, and communicate technical and economical terminology of information of industrial firms. **CO4:** Understand the Globalization and its impact on Indian Economy. **CO5:** Describe the Industrial Development in India.
22.	**1-6-107B**	**Labor Economics**	After Completion of this course the student would be able to: **CO1:** Evaluate and interpret the labor market policies of governments, unions and other actors in the labor market. **CO2:** Identify the actions of economic actors within the labor market, and identify various outcomes of the labor market, that are driven by economic incentives. **CO3:** Analyze labor market quantitative research. **CO4:** Synthesize information on different actors and outcomes across the various labor market topics. **CO5:** Analyze labor market issues through the application of economic data and theories.
23.	**1-6-107C**	**Industrial Management**	After Completion of this course the student would be able to: **CO1:** Choose, prepare, interpret and use cost

			estimates as a basis for the different situations in an industrial company. **CO2:** Interpret financial statements and other financial reports of industrial companies, including the income statement, the balance sheet, the cash flow statement and key measures in these. **CO3:** Understand strategic planning, management, management control, entrepreneurship, organization, production and learning work in an industrial company. **CO4:** Analyze the industrial company markets and price it's products. **CO5:** Explain how the company deal with it's environment.
HISTORY			
24.	**1-1-110 R**	**Ancient Indian History & Culture (From Earliest Times To 600 A.D)**	After Completion of this course the student would be able to: **CO1:** Understand the Literary & Archaeological Sources; Influence of Geography on History, Unity in Diversity and also Harrappen Civilization was urban Civilization in Indian Continental. **CO2:** Understand the Vedic Civilization was a Rural Civilization in Indian Continental. ; Jainism and Buddhism: Causes, Doctrines, Spread, Importance and Impact. **CO3:** Understand how Transition from Territorial States to Emergence of Empires Rise of Mahajanapadas Persian and Macedonian Invasions, Mauryan Empire: Ashoka's Dhamma, Art & Architecture, **CO4:** Understand Conditions during 200 B. C to 300 A. D.: Central Asian Contacts – Kushanas. The Age of Satavahanas, Sangam Age: The Three Early Kingdoms (Chola, Chera& Pandya). **CO5:** Understand in Gupat's Empire not only political condition consolidated besides cultural growth also occurred.
25.	**1-2-110**	**Early medieval indian history & culture (600 a.d to 1526 a. D.)**	After Completion of this course the student would be able to: **CO1:** Understand Harsha & His Times: Administration, Religion – Hiuen Tsang -Polity, Society, Economy and Culture from 7th to 11th Century A. D. under Chalukyas of Badami& Eastern Chalukyas of Vengi. **CO2:** Understand Age of later Pallavas during 7th& 8th Centuries A. D.: Contribution to Cultural Development & Art & Architecture; The Chola Empire from 9th to 12 Century A. D.: Rise of the Empire, Administration and Cultural Life. **CO3:** Understand under Conditions in India on the eve of Turkish Invasions; Early Invasions: Traces of Arab Invasion, Ghazni&Ghori; Delhi Sultanate (1206

			to 1290 A.D.) under Slave Dyanasty. **CO4:** Understand Delhi Sultanate (1290 to 1526 A.D.): Khaljis: Expansion & Consolidation, Administrative & Economic Reforms - The Tughlaqs - Decline & Disintegration of the Delhi Sultanate; Administration, Society, Economy, Technology, Religion, Art & Architecture under the Sultanate. **CO5:** Understand that in Cultural Development in India between 13th& 15th Centuries A. D.: Impact of Islam on Indian Society and Culture – Bhakti and Sufi Movements – Emergence of Composite Culture
26.	**1-3-110**	**Late Medieval & Colonial History of India (1526 to 1857 a. D.)**	After Completion of this course the student would be able to: **CO1:** Understand Emergence of Mughal Empire - Sources, Conditions in India on the eve of Babur's invasion, Brief Summary of Mughal Polity – Sher Shah & Sur Interregnum – Expansion & Consolidation of Mughal Empire – Rise of Marathas &Peshwas. **CO2:** Understand Administration, Economy, Society and Cultural Developments under the Mughals – Disintegration of Mughal Empire. **CO3:** Understand India under Colonial Hegemony : Beginning of European Settlements – Anglo-French Struggle – Policies of Expansion - Subsidiary Alliance & Doctrine of Lapse - Consolidation of British Empire in India up to 1857 A. D. **CO4:** Understand after the expansion Economic Policies of the British (1757-1857): Land Revenue Settlements – Commercialization of Agriculture – Impact of Industrial Revolution on Indian Industry; Administration of the Company – Regulating Charter Acts; Cultural & Social Policies: Humanitarian Measures & Spread of Modern Education. **CO5:** Understand that Anti-Colonial Upsurge – Peasant & Tribal Revolts - 1857 Revolt – Causes, Nature& Consequences.
27.	**1-4-110**	**Social Reform Movement & Freedom Struggle**	After Completion of this course the student would be able to: **CO1:** Understand that Social, Religious & Self-Respect Movements: Social & Cultural Awakening – Brahma Samaj, Arya Samaj, Theosophical Society, Ramakrishna Mission, Aligarh Movement – Emancipation of Women – Struggle Against Caste: JyotibaPhule, Narayana Guru, Periyar, Dr. B. R. Ambedkar. **CO2:** Understand that Growth of Nationalism in the 2nd Half of 19th Century – Impact of British Colonial Policies under Viceroys' Rule and the Genesis of Freedom Movement – Birth of Indian National Congress. **CO3:** Understand that Freedom Struggle from 1885 to 1920: Moderate Phase –– Partition of Bengal -

			Emergence of Militant Nationalism –Swadeshi & Boycott Movement – Home Rule Movement. **CO4:** Understand that Freedom Struggle from 1920 to 1947: Gandhiji's Role in the National Movement – Revolutionary Movement –Subhas Chandra Bose. **CO5:** Understand that Muslim League & the Growth of Communalism – Partition of India – Advent of Freedom - Integration of Princely States into Indian Union – Sardar Vallabhai Patel.
28.	**1-5-121**	**Age of Rationalism and Humanism The world between 15th& 18th Centuries**	After Completion of this course the student would be able to: **CO1:** Understand that Feudalism -Geographical Discoveries: Causes – Compass & Maps – Portugal Leads and Western World Follows – Consequences; **CO2:** Understand that The Renaissance Movement: Factors for the Growth of Renaissance – Characteristic Features- Transformation from Medieval to Modern World; Reformation & Counter Reformation Movements: The Background – Protestantism – Spread of the Movement– Counter Reformation– Effects of Reformation. **CO3:** Understand that Emergence of Nation States: Contributory Factors - England and other Nation States – Impact due to the Emergence of Nation States; Age of Revolutions: The Glorious Revolution (1688) – Origin of Parliament – Constitutional Settlement – Bill of Rights – Results. **CO4:** Understand that Age of Revolutions: The American Revolution (1776) – Opening of New World – Causes – Course – Declaration of Independence, 1776 – Bill of Rights, 1791 – Significance. **CO5:** Understand that Age of Revolutions: The French Revolution (1789) – Causes - Teachings of Philosophers - Course of the Revolution – Results.
29.	**1-5-122**	**History & Culture Of Andhra Desa (From 12th To 19th Century A.D.)**	After Completion of this course the student would be able to: **CO1:** Understand that Andhra during 12^{th} & 13^{th} Centuries A.D Kakatiyas – Origin & its Antecedents – Administration – Social & Economic Life – Industries & Trade - Promotion of Literature and Culture – Architecture & Sculpture – Decline; The Age of Reddy Kingdoms: Patronage to Literature – Trade & Commerce. **CO2:** Understand that Andhra between 14th & 16th Centuries A.D Vijayanagara Empire: Polity, Administration, Society & Economy – Sri Krishna Devaraya and his contribution to Andhra Culture – Development of Literature & Architecture – Decline and Downfall. **CO3:** Understand that Andhra through 16th& 17th Centuries A.D Evolution of Composite Culture - The QutbShahis of Golkonda – Origin & Decline –

			Administration, Society & Economy – Literature & Architecture. **CO4:** Understand that The 18th& 19th Centuries in Andhra East India Company's Authority over Andhra – Three Carnatic Wars – Occupation of Northern Circars and Ceeded Districts –Early Uprisings – Peasants and Tribal Revolts. **CO5:** Understand that Impact of Company Rule on Andhra – Administration – Land Revenue Settlements – Society – Education - Religion – Impact of Industrial Revolution on Economy – Peasantry & Famines – Contribution of Sir Thomas Munroe, C. P. Brown & Sir Arthur Cotton – Impact of 1857 Revolt in Andhra.
30.	**1-6-110**	**History of Modern Europe (from 19th century to 1945 a. D.)**	After Completion of this course the student would be able to: **CO1:** Understand that Industrial Revolution: Origin, Nature and Impact. **CO2:** Understand that Unification Movements in Italy & Germany and their Impact. **CO3:** Understand that Communist Revolution in Russia – Causes, Course and Results – Impact on World Order. **CO4:** Understand that World War I: Age of Rivalry in Europe Between 1870 and 1914 – Results of the War – Paris Peace Conference - League of Nations. **CO5:** Understand that World War II: Causes, Fascism & Nazism – Results; The United Nations Organization: Structure, Functions and Challenges.
31.	**1-6-110B**	**Popular Movements in Andhra desa (1848 to 1956 a.d.)**	After Completion of this course the student would be able to: **CO1:** Understand Social & Self Respect Movements: Social Conditions –Kandukuri Veeresalingam, Raghupathi Venkata Rathnam Naidu, Guruzada Apparao, Komarraju Venkata Laxmana Rao; New Literary Movements: Causes – RayaproluSubbarao, ViswanathaSathyanarayana, GurramJashua, Boyi Bheemanna, SriSri – Impact **CO2:** Understand Freedom Movement in Andhra (1885-1920): Contributory Factors – Vandemataram Movement – Swadeshi & Boycott programs – Glorious Events at Rajahmundry, Kakinada, Kotappakonda & Tenali – Home Rule Movement in Andhra. **CO3:** Understand Freedom Movement in Andhra (1920-1947): Non-Cooperation Movement – Chirala Perala, Palanadu & Pedanandipadu Activities – Alluri Seetarama Raju &Rampa Revolt (1922-24) – Anti-Simon Commission Movement – Civil Disobedience Movement – Quit India Movement. **CO4:** Understand Movement for Separate Andhra State (1953): Causes – Andhra Maha Sabha –

			Andhra Provincial Congress Committee – Andhra University – Conflict between Coastal Andhra & Rayalaseema – Sri Bagh Pact – Constitution of Committees & their Contribution – Martyrdom of PottiSriramulu – Formation of separate Andhra State. **CO5:** Understand Movement for formation of Andhra Pradesh (1956): Visalandhra Mahasabha – Role of Communists – States Reorganization Committee – Gentlemen's Agreement – Formation of Andhra Pradesh.
32.	**1-6-110C**	**Contemporary History Of Andhra Pradesh (1956-2014)**	After Completion of this course the student would be able to: **CO1:** Understand Socio-Economic Changes in Andhra Pradesh – River Projects & Infrastructural Development – Education & Scientific Progress – Regional Politics – Emergence of Telugu Desam Party. **CO2:** Understand Growth of Leftist Ideology – Marxist & Radical Literature – Naxalbary Movement - Communist Activities - Electoral Politics – Present Status of Communist Movement **CO3:** Understand Dalit Movement – Understanding Un-touchability - Education – Literature - Struggle for Identity – Demand for Political Space. **CO4:** Understand Early trends towards Bifurcation: Jai Telengana Movement (1969) – Mulki Rules – Legal Battle - Jai Andhra Movement (1972) – Six Point Formula (1973). **CO5:** Understand Bifurcation of Andhra Pradesh: Power Politics – Economic Discontentment – Riparian Disputes - Unemployment –Foundation of Telangana Rastra Samiti – Movements for separate Telangana & unified Andhra Pradesh – Formation of Telangana State (2014).
POLITICAL SCIENCE			
33.	**1-1-114R**	**Basic Concepts of Political Science**	After Completion of this course the student would be able to: **CO1:** Analyze what is Politics and explaining the approaches to the Study of Political Science – Normative, Behavioral, Post Behavioral, and Feminist. **CO2:** Assessing the theories of State (Origin, Nature, Functions): Contract, Idealist, Liberal and Neo-Liberal Theories. **CO3:** Distinguish nationality, nation and understand the Varieties of nationalism. **CO4:** Understand the civil and Social rights and distinguish universal and differential citizenship. **CO5:** Understanding basic concepts of Liberty, Equality, Rights, Law and Justice.
34.	**1-2-114R**	**Political Institutions(Concepts, Theories**	After Completion of this course the student would be able to:

		and Institutions)	**CO1:** Gain knowledge on Constitutional law, theory of separation of powers. **CO2:** Understand the structural form of modern state, parliament and presidential forms. **CO3:** Understand the features of federal and unitary forms of government. **CO4:** Gain knowledge on democracy, models of democracy. **CO5:** Know the nature, role and functions of judiciary and understand judicial review.
35.	**1-3-114**	**Indian Constitution**	After Completion of this course the student would be able to: **CO1:** Understand the ideological legacy of the Indian national movement on the constituent assembly. **CO2:** Understand the emergence, evolution, structure and composition of Indian Constitution. **CO3:** Know and understand the fundamental rights and directive principles and analyse the differences between them. **CO4:** Gain knowledge on unitary and federal features in the Indian constitution. **CO5:** Know the values of the Indian constitution and understand the nature and role of higher judiciary in India.
36.	**1-4-114**	**Indian Political Process**	After Completion of this course the student would be able to: **CO1:** Understand the Indian Political Process and evaluation of party system in India. **CO2:** Analyze the electoral process and voting behavior in India. **CO3:** Gain knowledge on powers, functions and role of election commission in Indian political system. **CO4:** Describe various challenges to Indian democracy. **CO5:** Understand the need for electoral reforms and women representation in parliament.
37.	**1-5-129**	**Indian Political Thought**	After Completion of this course the student would be able to: **CO1:** Understand the traditions of ancient Indian political thought revealed by great thinkers MANU and KAUTILYA **CO2:** Know the great works of RAMMOHAN ROY on religious and social reform. **CO3:** Analyze the drain theory and poverty theory of Dadabai Naoroji. **CO4:** Understand and compare the Hindu culture nationalism and Islamic Communitarian Nationalism **CO5:** Understand the democratic Egatitarianism of Gandhi, Jawaharlal Nehru, Dr.B.R .Ambedkar and M.N.Roy.

38.	**1-5-130**	**Western Political Thought**	After Completion of this course the student would be able to: **CO1:** Understand and acquire the knowledge about classical western political thoughts of plato and aristotile. **CO2:** Know the early medieval to the beginning of modern thought revealed by ST.Augustine and Machiavelli. **CO3:** Know the liberal thoughts of Thomas Hobbes, John Locke and Rousseau. **CO4:** Know the liberal democratic thought of Jeremy Bentham and john Stuart mill. **CO5:** Understand the philosophical idealism and its critique revealed by Hegel and Karl Marx.
39.	**1-6-114**	**Principles of Public Administration**	After Completion of this course the student would be able to: **CO1:** Understand the nature and scope of public administration. **CO2:** Differentiate administration theories like-Classical theory, Human relations theory and rational decision making theory. **CO3:** Analyze the importance of co-ordination and leadership in an organization. **CO4:** Understand the principles of organization, structure and its hierarchy. **CO5:** Gain knowledge on theories of motivation.
40.	**1-6-114A**	**International Relations**	After Completion of this course the student would be able to: **CO1:** Gain Knowledge on basic concepts of International relations. **CO2:** Understand approaches-Idealism, classical realism and modern realism of International relations. **CO3:** Analyze the Causes and effects of first and second world war. **CO4:** Gain knowledge on Origins of First Cold war, new cold war and the end of cold war. **CO5:** Understand the structure, functions and role of UNO in the protection of international peace.
41.	**1-6-114B**	**Indian Foreign Policy**	After Completion of this course the student would be able to: **CO1:** Understand determinants, Continuity and change in Indian foreign policy. **CO2:** Gain knowledge on Evolutionary growth of Non-Aligned movement. **CO3:** Understand the India's relations with USA and Russia. **CO4:** Analyze India's' role in south Asian Association of regional co-operation. **CO5:** Gain knowledge of trends in India's Foreign Policy.

42.	**1-6-114C**	**Contemporary Global Issues**	After Completion of this course the student would be able to: **CO1:** Understand meaning, nature, scope and types of globalization. **CO2:** analyze the role of anchors of global political economy. **CO3:** Understand the Nation state in context of Globalization and its consequences. **CO4:** Analyze the Contemporary global issues-Ecological and terrorism issues. **CO5:** Gain knowledge on world trade organization and Functionality of BRICS.
MATHEMATICS			
43.	**1-1-112R**	**Differential Equations**	After Completion of this course the student would be able to: **CO1:** Solve exact and linear first order and first degree differential equations with and without initial conditions. **CO2:** Determine the orthogonal trajectories of the given family of curves with one parameter. **CO3:** Solve differential equations of first order but not first degree using the methods: solvable for p, solvable for x, solvable for y and Clairaut's equation. **CO4:** Solve higher order linear differential equations with constant coefficients. **CO5:** Solve Cauchy – Euler equations by reducing to linear equation with constant coefficient.
44.	**1-2-112**	**Solid Geometry**	After Completion of this course the student would be able to: **CO1:** Identify geometric shapes and prove elementary geometric theorems. **CO2:** Demonstrate knowledge and understanding of plane and solid geometry. **CO3:** Use geometrical skills to solve simple real world problems. **CO4:** Develop technical skills in sketching and drawing. **CO5:** State and find surface areas of prisms, pyramids, cylinders, cones and spheres.
45.	**1-3-112**	**Abstract Algebra**	After Completion of this course the student would be able to: **CO1:** Trained in the Basic concepts of Groups and Subgroups. **CO2:** Understand the notion of normal subgroup and determine whether a given subgroup is normal. **CO3:** Understand the notions of homomorphism and isomorphism in groups. **CO4:** Decide whether a given group is cyclic, and for a finite cyclic group, find a generator for a subgroup of a given order.
46.	**1-4-112**	**Real Analysis**	After Completion of this course the student would be able to:

			CO1: Understand the fundamental properties of the real numbers that lead to the formal development of real analysis. **CO2:** Apply some simple techniques for testing the convergence of sequences and series. **CO3:** Determine the continuity and differentiability of functions defined on subsets of the real line. **CO4:** Apply the Mean Value Theorems to problems in the context of real analysis. **CO5:** Write the Taylor's series expansion of a function at a given point. **CO6:** Learn how to express a definite integral as limit of Riemann sum.
47.	**1-5-125**	**Ring Theory & Vector Calculus**	After Completion of this course the student would be able to: **CO1:** Write precise and accurate mathematical definitions of objects in ring theory; **CO2:** Use mathematical definitions to identify and construct examples and to distinguish examples from non-examples; **CO3:** Validate and critically assess a mathematical proof in ring theory; **CO4:** Use a combination of theoretical knowledge and independent mathematical thinking to investigate questions in ring theory and to construct proofs; **CO5:** Write about ring theory in a coherent, grammatically correct and technically accurate manner. **CO6:** Find the divergence and curl of a vector field and Identify conservative vector fields. **CO7:** Evaluate line integrals of curves and vector fields. **CO8:** Use Gauss's divergence theorem to evaluate surface integrals and Use Green's theorem to evaluate line integrals.
48.	**1-5-126**	**Linear Algebra**	After Completion of this course the student would be able to: **CO1:** Write precise and accurate mathematical definitions of objects in ring theory; **CO2:** Use mathematical definitions to identify and construct examples and to distinguish examples from non-examples; **CO3:** Validate and critically assess a mathematical proof in ring theory; **CO4:** Use a combination of theoretical knowledge and independent mathematical thinking to investigate questions in ring theory and to construct proofs; **CO5:** Write about ring theory in a coherent, grammatically correct and technically accurate manner.

			CO6: Find the divergence and curl of a vector field. **CO7:** Identify conservative vector fields. CO8: Evaluate line integrals of curves and vector fields. **CO9:** Use Gauss's divergence theorem to evaluate surface integrals. **CO10:** Use Green's theorem to evaluate line integrals.
49.	**1-6-112**	**Laplace Transforms**	After Completion of this course the student would be able to: **CO1:** Find the Laplace transform of a function from the definition of a Laplace transform. **CO2:** Find the Laplace transform of the exponential, cosine and sine functions. **CO3:** Use the appropriate shift theorems in finding Laplace Transforms. **CO4:** Find the Laplace transform of derivatives and integrals. **CO5:** Find Laplace Transforms of some special functions. **CO6:** Find the inverse Laplace transform of a function. **CO7:** Use the Convolution theorem to find the inverse Laplace transform.
PHYSICS			
50.	**3-1-116**	**Mechanics & Properties Of Matter**	After Completion of this course the student would be able to: **CO1:** Know the concepts of Scalar and vector fields, Curl, Divergence, gradient, Line, surface and volume integrals. Also to deduce Stokes, Gauss theorems and their applications. **CO2:** Gain knowledge on motion of variable mass system, Collisions in two and three dimensions, to solve problems on Rutherford scattering. **CO3:** Understand the concepts of rotational kinematics of rigid body, Moment of inertia of tensor, Euler equations, Precision of top, equinoxes and Gyroscope. Also to learn about types of beams, load analysis in various configurations and mechanics of cantelever. **CO4:** Gain understanding on conservative forces, equation of motion under central forces, Keppler's laws and Coriolis force. **CO5:** Learn about Galelian-Lorentz frames of references, Lorentz transformations, Michelson-Morley experiment, Postulates of special theory of relativity, length contraction, time delation, addition of masses, mass energy relation and 4 vector notations.
51.	**3-1-116**	**Waves & Oscillations**	After Completion of this course the student would be able to: **CO1:** Learn about physical properties of Simple

			Harmonic Motion (SHM), Torsional pendulum, Compound pendulum and their applications, Lissajous figures. **CO2:** Solve the differential equations for forced harmonic oscillator and damped harmonic oscillator and compare the results with simple harmonic oscillator. **CO3:** Know about Fourier theorem and evaluation of the Fourier coefficients, To analyse periodic wave functions-square wave, triangular wave, saw tooth wave, To solve simple problems on evolution of Fourier coefficients. **CO4:** Deduce wave equation for vibrating strings and study various parameters like modes, overtones, energy transport, transverse impedance etc. Also to learn Longitudinal vibrations in bars-wave equation and its general solution, and its Special cases (i) bar fixed at both ends (ii) bar fixed at the midpoint (iii) bar fixed at one end. **CO5:** Learn about basics of ultrasonic's, production and detection of ultrasonic's, measurement of frequency and velocity of ultrasonic and the applications of ultrasonic's.
52.	**3-4-116**	**Wave Optics**	After Completion of this course the student would be able to: **CO1:** Learn about various monochromatic aberrations (Spherical, Coma, Astigmatism, Curvature of the field and Distortion) and chromatic aberrations and their removal techniques. **CO2:** Understand the principle of superposition, coherence, Interference by division of wave-front and amplitude, Fresnel's bi-prism, thin film interference, wedge shaped film interference, Also to learn about Newton's rings Michelson's interferometer and their applications to sodium D lines and thickness of thin film. **CO3:** Learn about Fresnel and Fraunhoffer diffraction, Fraunhoffer diffrraction due to single slit, double slit, N-slit, grating. Also to learn about Fresnel's half period zones, zone plate, phase reversal zone plates, comparison of zone plate & convex lens, interference & diffraction. **CO4:** Learn about methods of polarization, Brewster's law, Malus law, Nicol prism, Quarter wave plate, half wave plate, babinet's compensator and optical activity analysis by Laurent's half shade polarimeter. **CO5:** Learn about principles of LASER, Einstein coefficients, He-Ne laser, Ruby laser, applications of laser, Principles of optical fiber communication, classification of optical fibers, applications of optical fibers, principles of holography, limitations of Gabor's

			hologram and applications of holography.
53.	**3-4-116**	**Thermodynamics & Radiation Physics**	After Completion of this course the student would be able to: **CO1:** Learn about Maxwell's distribution law, Tooth wheel experiment, and viscosity of gases, thermal conductivity and diffusion of gases. **CO2:** Learn about reversible, irreversible processes, Carnot's theorem, Carnot's engine, Kelvin's scale, entropy, disorder, T-S diagram and other applications of entropy. **CO3:** Understand thermodynamic potentials, Maxwell equations, Clausius-Clayperon's equation, to know Cp, Cv, Cp-Cv for perfect gas, J-K effect, J-K coefficient for perfect and Vander wall gases. **CO4:** Learn about Joul Thomson cooling, liquefaction of helium, Adiabatic demagnetization, effects of CFC gases, and applications of low temperature physics. **CO5:** Learn about Wein's law, Rayleigh-jeans law, Planks theory of radiation, various types of pyrometers, and how to determination of solar constant and effective temperature of temperature.
54.	**3-5-127**	**Electricity, Magnetism & Electronics**	After Completion of this course the student would be able to: **CO1:** Understand the concepts of electric field and eclectic potential due to point charge, uniform solid sphere, using these concepts will enhance the student towards the problems come across in the real life. They should also learn Electric dipole moment and molecular polarizability- Electric displacement D, electric polarization P – relation between D, E and P- Dielectric constant and susceptibility. Boundary conditions at the dielectric surface. **CO2:** Learn about Biot-Savart's law, explanation and calculation of B due to long straight wire, a circular current loop and solenoid – Lorentz force – Hall effect – determination of Hall coefficient and applications. Also learn Faraday's law-Lenz's law- Self and mutual inductance, coefficient of coupling, calculation of self inductance of a long solenoid, energy stored in magnetic field. Transformer - energy losses - efficiency. **CO3:** Learn about basics of varying of alternate Current - Relation between current and voltage in LR and CR circuits, vector diagrams, LCR series and parallel resonant circuit, Also learn Idea of displacement current - Maxwell's equations, To derive Maxwell's wave equation, Transverse nature of electromagnetic waves, Poynting theorem, and production of electromagnetic waves. **CO4:** Learn about Basics of electronics - PN junction diode, Zener diode, Tunnel diode, I-V characteristics,

			PNP and NPN transistors, CB, CE and CC configurations – Relation between, and - transistor (CE) characteristics -to determine hybrid parameters of Transistor. **CO5:** Know about Digital Electronics Concepts, Number systems - Conversion of binary to decimal system and vice versa. Binary addition and subtraction (1's and 2's complement methods).Laws of Boolean algebra - to deduce De Morgan's laws-Also to learn about Basic logic gates, NAND and NOR as universal gates, exclusive-OR gate, Half adder and Full adder, Parallel adder circuits.
55.	**3-5-128**	**Modern Physics**	After Completion of this course the student would be able to: **CO1:** Learn about the concepts of atomic models and their drawbacks. Also to learn about Vector atom model, this model gives the existence of spin of an electron. Study of fine spectra and Zeeman effect on various elements. Also to learn Raman effect and its applications. **CO2:** Learn about basics of Matter waves, de Broglie's hypothesis - wavelength of matter waves, Properties of matter waves - Davisson and Germer experiment – Phase and group velocities. Also to learn about Heisenberg's uncertainty principle for position and momentum, & energy and time. **CO3:** Learn about Basic postulates of quantum mechanics-Schrodinger time independent and time dependent wave equations, Physical interpretation of wave function. Application of Schrodinger wave equation to particle in one dimensional infinite box. **CO4:** Learn about Nuclear Physics Basic ideas of nucleus -size, mass, charge density (matter energy), binding energy, angular momentum, parity, magnetic moment, electric moments. Liquid drop model and Shell model (qualitative aspects only) - Magic numbers. They should also learn about Alpha decay: basics of α-decay processes. Theory of α-decay, Gamow's theory, Geiger Nuttal law.β-decay, Energy kinematics for β-decay, positron emission, electron capture, neutrino hypothesis. **CO5:** Distinguish Amorphous and crystalline materials, to learn unit cell, Miller indices, reciprocal lattice, types of lattices, diffraction of X-rays by crystals, Bragg's law, experimental techniques, Laue's method and powder diffraction method. Also to learn about Superconductivity - experimental facts, critical temperature - critical field - Meissner effect – Isotope effect - Type I and type II superconductors - BCS theory (elementary ideas only) - applications of superconductors
56.	**3-6-113**	**Materials Science**	After Completion of this course the student would be

			able to: **CO1:** Learn about Materials and Crystal Bonding: Materials, Classification, Crystalline, Amorphous, Glasses; Metals, Alloys, Semiconductors, Polymers, Ceramics, Plastics, Bio-materials, Composites, Bulk and nano-materials. Different types of chemical bonds –To study Binding energy of a crystal. **CO2:** Learn about Defects and Diffusion in Materials, Types of defects - Point defects- Line defects-Surface defects-Volume defects- Production and removal of defects- Deformation-irradiation- quenching-annealing- recovery. To know Diffusion in solids to derive Fick's laws of diffusion. **CO3:** Study about Mechanical Behavior of Materials, Different mechanical properties of engineering material, to know about the concept of Cree, Fracture and Factors affecting mechanical properties of a material, Heat treatment. Also to know about behavior of metals under Cold and hot working, Types of mechanical tests, Metal forming process, Deformation of metals. **CO4:** Learn about Magnetic Materials, Dia-, Para-, Ferri- and Ferromagnetic materials, to study Classical Langevin theory of dia magnetism, Quantum mechanical treatment of paramagnetism, Weiss's theory of ferromagnetism, Ferromagnetic domains. Discussion of B-H Curve, Hysteresis and energy Loss. **CO5:** Learn about basics of Dielectric Materials, Dielectric constant, dielectric strength and dielectric loss, polarizability, mechanism of polarization, factors affecting polarization, polarization curve and hysteresis loop, types of dielectric materials, also to learn about ferroelectric, piezoelectric and piezoelectric materials.
CHEMISTRY			
57.	**3-1-106R**	**Inorganic & organic Chemistry**	After Completion of this course the student would be able to: **CO1:** Understand the basis of general characteristics of group 13 to group 17 elements. **CO2:** Know the chemistry of some important components of Boron, carbon, silicon etc. **CO3:** Identify the reason for the aromaticity of various organic compounds. **CO4:** Understand the importance of structural theory in the organic chemistry which provides the basic knowledge for the basic knowledge for the students that helps in their further studies.
58.	**3-2-106**	**Physical and General chemistry**	After Completion of this course the student would be able to: **CO1:** Learn the concept like deviation from ideal gas equation vanderwaal equation, freundlisch &

			Langmuil adsorption isotherms **CO2:** Understand Liquid crystals and their applications **CO3:** Knowledge on symmetry in crystals, colloids, Emulsions **CO4:** Understand the spatial arrangement of atoms that determine the structure of a compound which is a fundamental of all the concepts of organic chemistry with the help of steren chemistry
59.	**3-3-106**	**Inorganic & Organic chemistry**	After Completion of this course the student would be able to: **CO1:** Study d blocks elements which are useful in determination of colored complex formation in Dye industry and formation of alloys. **CO2:** Learn metallic bonds, metal carbonyls and their stability and have a clear picture of alcohols, aldhehydes and ketons. **CO3:** Gain the knowledge of conductors, insulators and semiconductors **CO4:** Understand Various theories of bonding in metals is very useful in gaining knowledge about thermal and electrical conductance of metals.
60.	**3-4-106**	**Spectroscopy and physical chemistry**	After Completion of this course the student would be able to: **CO1:** Know about spectroscope, electromagnetic spectrum, IR spectroscopy and NMR Spectroscopy. **CO2:** Understand Conductance equivalent conductance & transport number will be enlightened. **CO3:** Gain command on Dilute solutions, elevation of B.P and depression of freezing point, Osmotic pressure. **CO4:** Understand Phase rule, Components of Degrees of freedom, Eutectic point, Nacl system, Pb-Ag system and freezing mixtures.
61.	**3-5-107**	**Inorganic, Organic & Physical chemistry**	After Completion of this course the student would be able to: **CO1:** Analyze Co-ordination compounds and their role in plants and animals', interaction of transition metal ions with biological molecules provides one of the mole fascinating areas of coordination chemistry. **CO2:** Gain Knowledge on first and second law of Thermodynamics. **CO3:** Undestand Nitro hydro carbons and their reactions. **CO4:** Gain knowledge of preparation & properties of Aliphatic & Aromatic amines.
62.	**3-5-108**	**Inorganic, Organic and Physical chemistry**	After Completion of this course the student would be able to: **CO1:** Understand molecular collision theory, Order and molecularity. **CO2:** Gain knowledge on Acquaint Photochemical reactions, luminescence and phosphorescence .

			CO3: Analyze the interaction of different carbohydrates and preparation of proteins. **CO4:** Gain knowledge Heterocyclic compounds. Their preparation & properties.
BOTANY			
63.	**3-1-103R**	**Microbial diversity, Algae and Fungi**	After Completion of this course the student would be able to: **CO1:** Understand the origin of Life and the diversity among Micro organisms **CO2:** Understand the diversity among algae. **CO3:** Understand the life cycle pattern of Algae and the useful and harmful activities of Algae **CO4:** Understand the diversity of Fungae and Economic importance of Fungae and Morphology of Lichens.
64.	**3-2-103R**	**Diversity of Archegoniate and plant Anatomy**	After Completion of this course the student would be able to: **CO1:** Understand the morphological diversity of Bryophytes, Pteridophytes and Gymnosperms. **CO2:** Understand the types of Plant tissues, tissue systems, root, stem, leaf anatomy. **CO3:** Understand the properties of Timber.
65.	**3-3-103**	**Plant Taxonomy and Embryology**	After Completion of this course the student would be able to: **CO1:** Understand the habit of angiosperm plant body. **CO2**: Know the vegetable and floral characters of the plant body. **CO3:** Understand the basic Taxonomy and classifications. **CO4**: Understand the Embryogenesis in plants.
66.	**3-4-103**	**Plant Physiology and Metabolism**	After Completion of this course the student would be able to: **CO1:** Understand the Water relations in Plants. **CO2:** Concepts of enzyme activity and enzyme inhibition and Controlling factors. **CO3:** Understand the Photosynthesis, Respiration, lipid metabolism in plants. **CO4:** Understand the plant movements, hormones in plants. **CO5:** Understand the flowering mechanism.
67.	**3-5-105**	**Cell Biology, genetics and plant breeding**	After Completion of this course the student would be able to: **CO1:** Understand the Eukaryotic cell, cell divisions, cell membrane, cell wall, organ cells. **CO2:** understand the Mendelian genetics. **CO3:** understand the phenomenon of dominance, laws of segregation, independent assortment of genes and gene interactions. **CO4:** Understand the plant breeding techniques.
68.	**3-5-106**	**Plant Ecology and Phytogeography**	After Completion of this course the student would be able to:

			CO1: understand the Eco system; plant Communities, Ecological adaptations in plants. **CO2:** Understand the phytogeographical regions of india. **CO3:** Understand the value of Biodiversity, loss of Biodiversity, and conversation of Biodiversity.
69.	**3-6-103**	**Nursery, Gardening and Floriculture**	After Completion of this course the student would be able to: **CO1:** Understand the Infrastructure of Nursery, Nursery management, routine garden Operations. **CO2:** understand the gardening, different types of gardening, landscape, home gardening, computer applications in landscaping, landscaping in highways and educational Industries. **CO3:** Understand the propagation methods. **CO4:** Understand the floriculture, indoor gardening, bonsai.
70.	**3-6-103A**	**Plant diversity and human welfare**	After Completion of this course the student would be able to: **CO1:** Understand the plant diversity, agro biodiversity. **CO2:** Understand the value of biodiversity, loss of biodiversity, conservation of biodiversity. **CO3:** Understand the contemporary practices in resource management, soil and liquid waste management. **CO4:** Understand the role of plants in relation to human welfare.
71.	**3-6-103B**	**Ethno botany and medicinal botany**	After Completion of this course the student would be able to: **CO1:** Understand the ethno botany as an inter disciplinary science, major and minor ethnic groups of India. **CO2:** Understand the role of ethno botany in modern medicine. **CO3:** Understand the ethno botany as a tool to protect interests of ethnic groups. **CO4:** Understand the ayurveda, siddha, unani. **CO5:** Study the conservation of endangered medicinal plants.
72.	**3-6-103C**	**Pharmacognosy and phyto chemistry**	After Completion of this course the student would be able to: **CO1:** Understand the chemical, pharmalogical, drug evaluation methods. **CO2:** Understand the organoleptic and microscopic studies of medicinal plants. **CO3:** Understand the secondary metabolities. **CO4:** Understand the biosynthesis and sources of drugs. **CO5:** Understand the enzymes, proteins and amino acids as drugs.
ZOOLOGY			

73.	**3-1-118**	**Animal diversity of non-chordates**	After Completion of this course the student would be able to: **CO1:** Identify and understand the general characteristics of protozoa, porifera and their morphology. **CO2:** Differentiate the general characteristics and classification of coelenterates and platyhelminth organisms. Understand the phenomena of polymorphism and life cycle of fasciola. **CO3:** Classify phylums like nematyhelminthes, annelida and arthropoda. Appreciate the digestive system of leech and appendages of prawn understand and apply the vermiculture process. Discuss the relationship of peripatus with annelids and arthropods as connecting link. **CO4:** Identify the given molluscan animal with respect to its economic importance. Appreciate and understand the process of torsion. **CO5:** Discuss the general characters of echinodermata and hemichordate. Understand the water vascular system. Describe various invertebrate larval forms.
74.	**3-2-119**	**Animal diversity of chordates**	After Completion of this course the student would be able to: **CO1:** identify the characters of chordates. Classify up to the classes describe and discuss the morphology and life history of branchiostoma – appreciate the mechanism of retrogressive metamorphosis. **CO2:** Recall The Concepts of Protochordates. Compare The General Characters Of Cyclostomes and Pisces. Understand The Various Physiological Processses Of Scoliodon. **CO3:** Differentiate the general characters of amphibians and reptiles. Explain the morphology and anatomy of rana and colotes. **CO4:** To create interest and appreciation on migration of fishe and birds to challenge he seasonal changes. Describe the morphology of Columbalivia know the value of archaeopteryx. **CO5:** Understand the mammalian taxonomy and dentition in mammal. **CO6:** Identify and analyze the characteristics and fauna of oriental region. Australian region and ethopian region.
75.	**3-3-118**	**Cytology, Genetics, evolution**	After Completion of this course the student would be able to: **CO1:** Understand the structural and functional differences between prokaryotes and eukaryotes. Develop the skill of drawing eukaryotic cell and prokaryotic cell. gain knowledge about viruses and virioids.

			CO2: Describe the structures of membranous cell organelles and understand the functions of various cell organelles and their importance in physiology. **CO3:** Explain the importance of unifying concepts in biology including cell theory, unit membrane concept and fluid mosaic model. **CO4:** Evaluate the development of special chromosomes to meet the biological & physiological demands of organisms. **CO5:** Recalls, recognizes the laws of heredity, crossing over, sex determination and sex linked inheritance. **CO6:** Understand and appreciate the value of genes involved in inheritance ,dominance and multiple alleles and genetic disorders understand the role and significance of chromosomes in sex determination. **CO7:** Gain broad understanding of the organic theory of evolution explains hardy weinberg law, variations, mutations, and speciation. **CO8:** Discuss the method of natural selection and know how natural selection ultimately underpins all biological process that leads to evolution f new organisms (biological diversity)
76.	**3-4-118**	**Embryology, Ecology And Animal Behavior**	After Completion of this course the student would be able to: **CO1:** Identify the different parts of digestive system. Describe the structure and functions of various parts of digestive system learn the physiology of digestion. **CO2:** Describe the structure of lungs discuss add explains the mechanism and chemistry of transport of gases in human respiration at cellular level. Understand the urine formation mechanism. **CO3:** Gain knowledge on nervous system and transmission of nerve impulse analyze synaptic transmission and neurotransmitters. Relate the structure of muscle to muscle contraction. Appraise the important uses of endocrine glands and their hormones in maintaining physiological harmony among animals. **CO4:** Understanding of ecological relationship between organisms and their environment examinee and summarize central ideas under planning the ecology of ecosystems and ecological succession. Distinguish between symbiosis and mutualism. **CO5:** Gain knowledge on different types of animal behavior understands the taxes and reflexes reflex arc mechanism learn the classical conditioning & instrumental learning. Understand and analyze biological clocks & circadian rhythms.
77.	**3-5-131**	**Animal biotechnology**	After Completion of this course the student would be able to: **CO1:** Provide scientific and technical knowledge by

			using the recombinant DNA technology methods. **CO2:** Gain the knowledge of PCR and DNA sequencing in recombinant DNA technology and its applications in human welfare. **CO3:** Examine the animal cell culture techniques explain organ and system cell culture. Know the value of hybridoma technology. **CO4:** Know the need of reproductivve technologies & transgenic animals in the society and application of these techniques in producing transgenic sheep's and fishes. **CO5:** Understand and learn the importance of animal biotechnology in the field of industrial fermentation, agriculture and aquaculture. Know the method and uses of DNA finger printing.
78.	**3-5-132**	**Animal Husbandry**	After Completion of this course the student would be able to: **CO1:** Gain the knowledge and importance fo different animals in human welfare. **CO2:** Understand the management of different types of chicks used in poultry. Disease control, nutritional requirements for different stages of hens. **CO3:** Get the broad knowledge about hatchery design technology, egg testing methods and maintenance. **CO4:** Evaluate the procedures of breeding in cattle and buffaloes. **CO5:** Understand the principles of care management in animal husbandry calf, bull, bullocks.
79.	**3-6-114A**	**Immunology**	After Completion of this course the student would be able to: **CO1:** Know the basic concepts in immunology compare and contrast innate and adaptive immunity. Understand cells and organs of immune system. **CO2:** Discuss the basic properties of antigens, band T cell epitopes & happens. Study and organise the factors influencing immunogecity. **CO3:** Develop the skill of drawing antibody structure. Classify antibodies understand the functions of monoclonal antibodies & major histocompatibility complexes. **CO4:** Classify and describe various types of hyper-sensitivities gain knowledge on vaccines and learn types of vaccines.
Computer Science			
80.	**3-1-108R**	**Computer Fundamentals and Programming in C**	After Completion of this course the student would be able to: **CO1:** Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming. **CO2:** Write, compile and debug programs in C

			language and use different data types for writing the programs. **CO3:** Design programs connecting decision structures, loops and functions. **CO4:** Explain the difference between call by value and call by address. **CO5:** Understand the dynamic behavior of memory by the use of pointers. **CO6:** Use different data structures and create / manipulate basic data files and developing applications for real world problems.
81.	**3-2-109**	**Object Oriented Programming Using C++**	After Completion of this course the student would be able to **CO1:** Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects. **CO2:** Understand dynamic memory management techniques using pointers, constructors, destructors, etc **CO3:** Describe the concept of function overloading, operator overloading, virtual functions and polymorphism. **CO4:** Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming. **CO5:** Demonstrate the use of various OOPs concepts with the help of programs.
82.	**3-3-108**	**Object Oriented Programming Using Java**	After Completion of this course the student would be able to: **CO1:** Understand the use of OOPs concepts. **CO2:** Apply OOPs concepts to solve real world problems **CO3:** Understand the use of abstraction, Packages and Interface in java. **CO4:** Develop Programs for exception handling, multithreaded applications with synchronization. **CO5:** Able to design GUI based applications and develops applets for web applications.
83.	**3-4-108**	**Data Structures**	After Completion of this course the student would be able to: **CO1:** Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms. **CO2:** Apply for arrays, records, linked structures, stacks, queues, trees, and graphs in developing applications. **CO3:** Compare alternative implementations of data structures with respect to performance and benefits of dynamic and static data structures implementations. **CO4:** understand the concept of recursion, and describe how it can be implemented using a stack.

			CO5: calculate computational efficiency of the principal algorithms for sorting, searching, and hashing.
84.	**3-5-111**	**Database Management Systems**	After completing this course satisfactorily, a student will be able to: **CO1:** Understand the fundamental elements of relational database management systems. **CO2:** Gain knowledge concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL. **CO3:** Design ER-models to represent simple database application scenarios. **CO4:** Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data. **CO5:** apply normalization in database design.
85.	**3-5-112**	**Software Engineering**	After completing this course satisfactorily, a student will be able to: **CO1:** Gain knowledge on software engineering principles and techniques. **CO2:** Develop, maintain and evaluate large-scale software systems. **CO3:** Produce efficient, reliable, robust and cost-effective software solutions. **CO4:** Ability to work as an effective member or leader of software engineering teams. **C5:** Understand and meet ethical standards and legal responsibilities.
86.	**3-6-107B**	**Computer Networks**	After completing this course satisfactorily, a student will be able to: **CO1:** Independently understand basic computer network technology. **CO2:** Identify the different types of network topologies and protocols. **CO3:** Explain the types of transmission media with real time applications **CO4:** Gain knowledge on the functions of all layers and their protocols. **CO5:** Understand the routing protocols and analyze how to assign the IP addresses for the given network.
87.	**3-6-107B2**	**Cloud Computing**	After completing this course satisfactorily, a student will be able to: **CO1:** Compare the strengths and limitations of cloud computing. **CO2:** Identify the architecture, infrastructure and delivery models of cloud computing. **CO3:** Apply suitable virtualization concepts. **CO4:** Choose the appropriate cloud player, Programming Models and approach. **CO5:** Address the core issues of cloud computing such as security, privacy and interoperability.

88.	**3-6-107B1**	**Distributed Systems**	After completing this course satisfactorily, a student will be able to: **CO1:** Demonstrate knowledge of the basic elements and concepts related to distributed system technologies and architectural aspects of distributed systems; **CO2:** Understand various distributed algorithms, such as logical clocks and leader election. **CO3:** Design and implement distributed applications; **CO4:** Demonstrate knowledge of details the main underlying components of distributed systems (such as RPC, file systems); **CO5:** Use and apply important methods in distributed systems to support Task Assignment, Load balancing, Migration and threads.
COMPUTER APPLICATIONS			
89.	**1-1-106R**	**Fundamentals of Computers**	After Completion of this course the student would be able to: **CO1:** Describe the essential computer parts and their importance. **CO2:** Distinguish different types of input and output devices. **CO3:** Identifies types of processors and connecting peripheral devices. **CO4:** Identify the advantages and characteristics of different storage mediums. CO5: Describe assembling and to perform some simple trouble shooting.
90.	**1-2-124**	**Fundamentals of Operating system**	After Completion of this course the student would be able to: **CO1:** Describe the role of operating systems. **CO2:** Understand different types of Operating Systems. **CO3:** Identifies the advantages of the special purpose operating systems such as embedded OS.
91.	**1-3-106**	**Programming in C**	After Completion of this course the student would be able to: **CO1:** Employ fundamental computer theory to basic programming techniques & describe the importance of algorithms and characteristics of different types of programming languages. **CO2:** Explain about the features of C language and different types of statements used in C. **CO3:** Identifies the advantages and implementation of modular programming. **CO4:** Write simple c program for handling files used to store data.
92.	**1-4-106**	**Object Oriented Programming in C++**	After Completion of this course the student would be able to: **CO1:** Use the characteristics of an Object Oriented programming language.

			CO2: Understand the relative merits of C++ as an Object Oriented programming language. **CO3:** Develop programs with features of C++ programming langue. **CO4:** Understand and explain advanced features of C++ like constructors, function overloading, operator overloading, file handling.
93.	**1-5-113**	**Database Management System**	After Completion of this course the student would be able to: **CO1:** Explain the features of database management systems and relational database. **CO2:** Design conceptual models of a database using ER modeling for real life applications. **CO3:** Create and populate a RDBMS for a real life application, with constraints and keys using SQL. **CO4:** Retrieve any type of information from a database by formulating complex queries in SQL.
94.	**1-5-114**	**Web Technology**	After Completion of this course the student would be able to: **CO1:** Understand different types of networks and web terminologies. **CO2:** Understand and use HTML tags to design web pages. **CO3:** Identify and use components required to design dynamic web pages.
95.	**1-6-106**	**E-Commerce**	After Completion of this course the student would be able to: **CO1:** Define and differentiate various types of E-Commerce. **CO2:** Describes the technologies for E-Commerce. **CO3:** Explains about threats and measures for security.
COMMERCE			
96.	**2-1-114**	**Business Economics-I**	After Completion of this course the student would be able to: **CO1:** Understand basic concepts used in economics. **CO2:** Understand law of demand on the basis of utility. **CO3:** Gain knowledge Consumer's Equilibrium Concept with the help of Indifference Curve & equi – marginal Utility. **CO4:** Understand the relationship between demand and other factors, and how change in various factors affects demand. **CO5:** Learn the concept of production function, how production units are decided and how production changes with time. **CO6:**Know about National Income GNP and NNP
97.	**2-1-112**	**Business Organization**	After Completion of this course the student would be able to:

			CO1: Understand the concept of Business **CO2:** Knowing the concepts Trade, Industry and commerce. **CO3:** Know the Factors influencing the choice of suitable form of business. **CO4:** Different forms of business organizations like sole trader ship, partnership and corporate Business etc. **CO5:** Know the procedure to incorporation of a company under companies act, 2013. **CO6:** Know the types of companies like private company and public company and their differences. **CO7:**Prepare of various documents in the formation of a company
98.	**2-1-111**	**Fundamentals Of Accountancy-I**	After Completion of this course the student would be able to: **CO1:** Understand the principles of double entry system and the concepts of debit and credit. **CO2:** Know the Preparation of ledgers and journals. **CO3:** Work out the results in terms of financial position and financial performance of sole trader ship. **CO4:** Understand how consignment can be used as a way to spread business beyond local boundaries. **CO5:** Calculate profit earned by a consignor by preparing accounts of consignment business and valuation of unsold goods with the consignee. **CO6:** Realize the importance of computerized accounting in a business and have a theoretical base of the accounting software Tally.
99.	**2-2103R**	**Business Environment**	After Completion of this course the student would be able to: **CO1:** Understand the objectives planning in India like NITI Ayog and National Development Council. **CO2:** Understand overall business environment and evaluate its various components in business decision making. **CO3:** Know the analysis and examination of significant contemporary ethical issues and challenges existing throughout the professional business arena. **CO4:** Take The manager's social and environmental responsibilities to a wide variety of stakeholders, including employees, customers and the public. **CO5:** familiarize with the nature of business environment and its components. **CO6:** Demonstrate and develop conceptual framework of business environment and generate interest in international business. **CO7:** Gain knowledge the minor and major factors affecting the business in various streams. **CO8:** know the different environment like, political,

			technological and economic environment in the business. **CO9:** Acquire in-depth knowledge about legal environment etc.
100.	**2-4-103**	**Income Tax**	After Completion of this course the student would be able to: **CO1:** Understand the Direct and Indirect and Definitions of Income tax as per Income Tax Act. **CO2:** Know Residential Status of an individual assessee. **CO3:** Describe Incomes exempt from income tax. **CO4:** Understand various definitions as per Income Tax law, responsibilities of various income tax authorities and the assessment procedure.
101.	**2-3-101**	**Business Statistics**	After Completion of this course the student would be able to: **CO1:** Get an idea about the "importance of statistics in business applications and the role being played by them in the economic development of the country". **CO2:** Produce appropriate graphical and numerical descriptive statistics for different types of data. **CO3:** Use of statistical, graphical and algebraic techniques wherever relevant.
102.	**2-4-101**	**Business Laws**	After Completion of this course the student would be able to: **CO1:** Understand Indian Contract Act, 1872 – Essentials of Contract, Types of Contract, Competent Party, And Free Consent. **CO2:** Gain Knowledge on Consideration, Compensation in Indian Contract Act, 1872. **CO3:** understand Performance of Contract, Discharge of Contract, Contingent Contract, Quasi Contract and Sale of Goods Act 1930
103.	**2-3-103**	**Banking Theory and Practice**	After Completion of this course the student would be able to: **CO1:** Gain Knowledge on banking, functions of banks and financial system in India. **CO2:** Gain knowledge about commercial banks and its products **CO3:** Understand banking system in India. **CO4:** Understand better customer relationship. **CO5:** Understand modern banking services like e-banking, m-banking and internet banking.
104.	**1-3-101**	**Corporate Accounting**	After Completion of this course the student would be able to : **CO1:** Know the journal entries in the books of a company for Issue of shares, forfeiture and reissue of shares allotted on a pro-rata basis. **CO2:** Have an insight into the formats of the vertical financial statements of a company as per the Schedule III of latest provisions of the Companies Act 2013 and prepare them.

			CO3: Work out the problems regarding valuation of Goodwill and various accounting standards. **CO4:** Compute goodwill of a company using various methods when past data is provided. **CO5:** Calculate the intrinsic value, market value and fair value of fully paid or partly-paid equity shares and preference shares. **CO6:** Have a basic understanding of valuation of right shares and bonus shares.
105.	**1-4-101**	**Accounting for service organizations**	After Completion of this course the student would be able to : **CO1:** Know the various legal provisions of the Banking Regulation Act 1949 and important terminology related to banks. **CO2:** Prepare the Balance Sheet and the Income Statement of a bank along with relevant schedules. **CO3:** Understand Types of Service Organizations – Section (8) and other Provisions of Companies Act,2013 –Receipts and Payments Accounts and Income and Expenditure Account- preparation of income and expenditure account and Balance sheet **CO4:** Gain Knowledge on Accounts of Electricity supply companies: Double Accounting system – Revenue Account – Net Revenue Account – Capital Account – General Balance Sheet. **CO5:** Understand the Bank Accounts – Books and Registers to be maintained by Banks – Banking Regulation Act,1969 - Legal Provisions Relating to preparation of Final Accounts, **CO6:** Gain Knowledge on Life Insurance Companies – Preparation of Revenue Account, Profit and Loss Account, Balance Sheet as per LIC Act, 1956. Preparation and valuation of balance sheet – correct life assurance fund **CO7:** Understand Insurance concepts - average clause-calculation of salvage value – claims for loss of stock
106.	**2-5-101**	**Cost Accounting**	After Completion of this course the student would be able to : **CO1:** Prepare cost statement and tenders. **CO2:** Have basic understanding of cost accounting, and be aware of techniques of costing and various methods of costing. **CO3:** Understand in detail material as an element of cost, and methods of pricing issues of material. **CO4:** Understand labor cost as an element of cost, and various terms associated with labour cost remuneration methods, individual and group incentive. **CO5:** Compute remuneration by time wage and piece wage systems, bonus payable, and labour turnover rates.

			CO6: Understand overheads as an important component of cost, and segregate semi-variable overheads into fixed and variable costs. **CO7:** Allocation, Apportionment and reapportion of factory overheads amongst various production and service departments. **CO8:** Calculate rates of absorption of overheads and estimate future overheads using these rates.
107.	**1-5-102**	**Advanced corporate accounting.**	After Completion of this course the student would be able to know the **CO1:** Importance of accounting standards in the procedure of accounting **CO2:** objectives of accounting standards **CO3:** Meaning of amalgamation – calculation of purchase consideration – Methods – Accounting procedure in preparation of journal entries and Balance sheet with suitable illustrative problems. **CO4:** Necessity of internal Reconstruction – Importance – Procedure for reducing share capital – Journal entries and preparation of Revised Balance sheet. **CO5:** Meaning and modes of Liquidation in corporate accounts – Voluntary Liquidation – Procedure for preparation of Liquidator"s statement of account – calculation of liquidator"s remuneration (Simple problems) **CO6:** Concept of Holding and subsidiary company Preparation of consolidated balance sheet with live adjustments.
108.	**1-5-101**	**Goods And Services Tax**	After Completion of this course the student would be able to **CO1:** Analyze the taxable event under GST its meaning and scope. Meaning of Goods and services **CO2:** Compare and appreciate the differences between the taxable events under earlier indirect taxes regime and the GST regime. **CO3:** Identify the transactions that will amount to supply even without any consideration. **CO4:** Identify the transactions which will be treated as supply of goods and the transactions which will be treated as supply of services along with practical illustration comparing the situation under the earlier regime and the GST regime. **CO5:** Pinpoint the transactions which will be neither the supply of goods nor the supply of services.
109.	**2-5-104**	**Project Management**	After Completion of this course the student would be able to know the **CO1**: Basics of Project Management: Project Identification Process, Initiation, Phases. **CO2:** Project Planning and Control : Project Planning, Responsibility and Team Work.

			CO3: Project Execution control and Close out : Project Control, Purpose of Execution and control – Project Close – out Project Termination, Project Follow-up **CO4:** Project Performance Measurement and Evaluation: Performance Measurement – Performance Evaluation, Challenges of Performance Measurement and Evaluation. **CO5:** Project Cost estimation and Budget; project evaluation; Case Study and presentation.
110.	**2-5-112**	**Rural and Farm Credit**	After Completion of this course the student would be able to know the **CO1:** Objectives and Significance of Rural credit - Classification of rural credit - General Credit Card (GCC) – Financial Inclusion - Rupay Card. **CO2:** Institutional and Non-institutional Agencies for financing agriculture and Rural development - Self-Help Groups (SHG) - Financing for Rural Industries. **CO3:** Importance of farm credit - Principles of Farm Credit - Cost of Credit - Types - problems and remedial measures - Kisan Credit Card (KCC) Scheme. **CO4:** Cooperative Credit: PACS - APCOB - NABARD - Lead Bank Scheme - Role of Commercial and Regional Rural Banks - Problems of recovery and over dues. **CO5:** Analysis of 3 R"s (Return, Repayment Capacity and Risk-bearing Capacity) - Analysis of 3 C"s of Credit (Character, Capacity and Capital) - Crop index reflecting use and farm credit - Rural Credit Survey Reports.
111.	**2-5-111**	**Central Banking**	After Completion of this course the student would be able to know the **CO1:** Evolution and Functions of Central Bank - Development of Central Banks in India - Trends in Central Bank Functions. **CO2:** Reserve Bank of India - Constitution and Governance, Recent Developments, RBI Act. **CO3:** Monetary policy statements of RBI - CRR - SLR - Repo Rates - Reverse Repo Rates - Currency in circulation - Credit control measures. **CO4:** Intervention mechanisms - Exchange rate stability - Rupee value - Controlling measures. **CO5:** Supervision of Banks - Basle Norms, Prudential Norms,
112.	**2-6-101**	**Advanced Cost Accounting**	After Completion of this course the student would be able to know the **CO1:** Preparation of Reconciliation statement **CO2:** Reasons for the differences between the cost profit and Financial Profit – Reconciliation of the cost profit with the financial profit vice versa. **CO3:**Meaning of process costing – Manufacturing

			companies with suitability of process costing – preparation of process accounts with loss in weight, normal loss, abnormal loss and abnormal gain **CO4:** Meaning and the various types of operating costing businesses i.e. Transport costing Problems with Transport Costing relating to – operating Cost per kilo meter and passenger Kilo meter. **CO5:**Meaning of standard cost and actual cost – variances calculation of Material variances Material cost variance, Material price variance, Material Quantity variance, Material Mix variance, Material sub usage variance, Material yield variance etc. **CO6:** Meaning of budget – Importance of budget costing – Preparation of budgets – Problems on the preparation of fixed budget and flexible budget only.
113.	**1-6-101B**	**Management Accounting**	After Completion of this course the student would be able to : **CO1:** Prepare of Financial statements and there on analysis of the financial position of the business. **CO2:** Interpret and Analysis through Financial Ratios have in-depth knowledge of ratio analysis, and should be able to calculate and interpret various financial ratios. **CO3:** Prepare of Cash Flow Statement, Budgeting and Cash Budget **CO4:** Understanding of Management Accounting and how it differs from Cost Accounting. **CO5:** Analyze and interpret financial statements using various tools of financial analysis. **CO6:** Preparation of Cash Flow Statement of a company as per AS 3.
114.	**2-6-105**	**Financial Services**	After the successful completion of the course, the student will get **CO1:** an idea about the "importance of financial services and the role being played by them in the economic development of the country". **CO2:** familiarity on basic financial services like Banking, Insurance, factoring etc. **CO3:** the knowledge of the functioning of the Indian Financial System and to make them aware of the components of the system **CO4:** Understand the principles of banking and their functions. **CO5:** Describe financial intermediaries, instruments and markets. **CO6:** basic knowledge about important organizations like RBI, SEBI, IRDA. **CO7:** the concept and functioning of Stock Exchanges.
115.	**2-6-106**	**Marketing and Financial Services**	After the successful completion of the course the student will know **CO1:** the differences between the goods and services

			and to evolve plans, strategies for the delivery of financial services **CO2:** Managing Service Counters, Integrated Service Management. **CO3:** Managing People for service Advantage Service Quality and Productivity – Customer Loyalty. **CO4:** Pricing strategies, Promotion strategies B2B Marketing – Marketing Planning and Control for services. **CO5:** Distributing Services: Cost and Revenue Management – Approaches for providing services - Channels for Service provision – Designing and managing Service Processes. **C06:** Retail Financial Services Investment services – Insurance services - Credit Services - Institutional Financial Services - Marketing practices in select Financial Service Firms.
116.	**1-6-101A**	**Auditing**	After the successful completion of the course the student will know **CO1:** Introduction to auditing, and an overview of the auditing process. **CO2:** Understanding the role of management in the preparation of the financial report Fundamental audit concepts **CO3:** Planning the audit: knowledge of the business and evaluating business risk, Assessing specific business risks and materiality. **CO4:** Understanding and assessing internal control. **CO5:** Completing the Audit. The Auditor's reporting duties **CO6:** The professional and regulatory environment: Legal issues affecting auditors.